

DEFENDANTS' MOTION FOR SUMMARY JUDGMENT—EXHIBIT 5  
WILLIAM CARDEN DEPOSITION (FEB. 15, 2018)

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IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF VIRGINIA  
ROANOKE DIVISION  
CLARENCE EDWARD WHITAKER, etc.,  
Plaintiff,  
vs CASE NO.: 7:17-CV-55-GEC  
HYUNDAI MOTOR COMPANY, et al.,  
Defendants.

/

DEPOSITION OF WILLIAM CARDEN

The deposition of WILLIAM CARDEN, taken by  
the attorney for the Defendants, commencing at 8:54  
a.m., on the 16th day of February 2018, at Wierzbicki  
Court Reporting, 220 W. Garden Street, Suite 801,  
Pensacola, Florida, before Cynthia Layer, Certified  
Shorthand Reporter and Notary Public at Large, in and  
for the State of Florida.

Job No. CS2797503

APPEARANCES

FOR THE PLAINTIFF:

JAMES LOWE, ESQUIRE  
LOWE, EKLUND, WAKEFIELD  
COMPANY, LPA  
1660 W. 2nd Street, Suite 610  
Cleveland, Ohio 44113

FOR THE DEFENDANTS:

CHRISTOPHER SPENCER, ESQUIRE  
SPENCER SHUFORD, LLP  
6806 Paragon Place, Suite 200  
Richmond, Virginia 23230

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1 WHEREUPON,

2 W I L L I A M C A R D E N

3 was called as a witness and, after having been first  
4 duly sworn, was deposed and testified as follows:

5 DIRECT EXAMINATION

6 BY MR. SPENCER:

7 Q. Would you tell us your name, please?

8 A. William Carden.

9 Q. Mr. Carden, will you let me know if you  
10 don't understand my question so I could rephrase it?

11 A. Yes.

12 Q. Would you agree that Ms. Whitaker left the  
13 car in drive?

14 A. That is the indication, yes.

15 Q. You don't think she did anything other than  
16 leave it in drive with the gearshift selector, correct?

17 A. The gearshift selector was in drive and the  
18 key was out of the ignition.

19 Q. You think the gearshift selector was in  
20 drive because Ms. Whitaker left it there, correct?

21 A. I have no reason to think that would not be  
22 the case. That was the testimony of the investigating  
23 officer.

24 Q. You don't know what Ms. Whitaker did or when  
25 she did it to put it in drive, correct?

1           A.    I wasn't there. I know that that was the  
2 information that was provided from the investigation.

3           Q.    You're not aware of any evidence that  
4 reveals when and how Ms. Whitaker left the gearshift  
5 selector in drive, true?

6           A.    Not specifically.

7           Q.    What I said is correct?

8           A.    I believe -- if I understand you correctly,  
9 yes, the gearshifter was in drive, but I do not know  
10 how it got that way specifically.

11          Q.    And nobody does?

12          A.    As far as I know, there's nobody that  
13 witnessed that.

14          Q.    Right. Do you agree with Mr. Clarke that  
15 there is no evidence as to when Ms. Whitaker removed  
16 the key from the ignition cylinder?

17               MR. LOWE: Objection.

18          A.    Again, there is no witnesses to that. I  
19 know the key was out of the ignition cylinder and the  
20 shifter was in drive.

21 BY MR. SPENCER:

22          Q.    When the investigators came on the scene and  
23 started documenting these things, true?

24          A.    Yes, when they came on the scene, and when  
25 they saw the vehicle and saw what happened, yes.

1           Q.    By that time, of course, the event was over,  
2   correct?

3           A.    Well, she was still trapped in the car.

4           Q.    But neither she nor the car was continuing  
5   to move, correct?

6           A.    As far as I know. That's not indicated in  
7   the testimony that I reviewed so far.

8           Q.    You're not aware of any evidence that tells  
9   us whether Ms. Whitaker pulled the key out of the  
10   ignition before her vehicle began to roll or after it  
11   began to roll, are you?

12          A.    Again, I don't think there's any witnesses  
13   that know that.

14          Q.    And there's no other evidence of any kind to  
15   that effect, is there?

16          A.    Well, like I said, the key was out of the  
17   ignition and the shifter was in drive.

18          Q.    Here's what I'm getting at: You qualified  
19   your last answer by saying, I'm not aware of any  
20   witnesses. There is evidence other than witnesses, and  
21   so I'm trying to get a complete picture here. Okay?

22                You've already told us you're not aware of any  
23   witnesses who can tell us when Ms. Whitaker removed the  
24   key from the ignition cylinder. My question is, are  
25   you aware of any other evidence of any kind that can



1 answer the question, when did Ms. Whitaker pull the key  
2 out of the ignition cylinder?

3 A. As far as timing, I couldn't tell you that.  
4 I did not witness that. But we do know that the key  
5 was capable of being removed from the ignition cylinder  
6 with the shifter in a position other than park.

7 Q. I take it that -- well, let me ask you this:  
8 Do you believe that the evidence shows that the  
9 ignition cylinder was found in the off lock position  
10 once the investigators arrived?

11 A. Yes.

12 Q. Do you know who turned the ignition cylinder  
13 into the off lock position? Do you have any evidence?

14 A. I have the circumstantial evidence from the  
15 scene that the keys were out of the ignition.

16 Q. So you surmise that Ms. Whitaker must have  
17 turned the ignition cylinder into the off lock  
18 position, true?

19 A. That is most likely.

20 Q. But you have no evidence as to when  
21 Ms. Whitaker turned the ignition cylinder to off lock,  
22 do you?

23 A. I did not witness it, and I do not know  
24 anybody else that would have other than Mrs. Whitaker.

25 Q. So there's no evidence as to when

1 Ms. Whitaker turned the ignition cylinder to the off  
2 lock position, correct?

3 A. I don't know of any evidence where you could  
4 time it specifically.

5 Q. Great. Thank you. When did you realize  
6 that the harvesting of steering columns was a waste of  
7 time?

8 MR. LOWE: Objection.

9 A. I don't think it would ever be a waste of  
10 time.

11 BY MR. SPENCER:

12 Q. Well, why did you harvest steering columns?

13 A. I did not harvest steering columns.

14 Mr. Clarke did.

15 Q. Why did Mr. Clarke harvest steering columns?

16 A. To understand the mechanism and the system.

17 Q. Of the steering column?

18 A. Of the steering column and the shifter as  
19 well.

20 Q. But not the wiring harness?

21 A. The wiring harness is part of that system.

22 Q. Half of it is, anyway.

23 A. Well, they're connected, so it is part of  
24 the system that connects the two.

25 Q. Well, the only part of the wiring harness

1 that Mr. Clarke removed was that part that was  
2 connected to the ignition cylinder, not the part that  
3 was connected to the parking position switch, true?

4 A. Are you talking about the subject vehicle or  
5 other vehicles?

6 Q. Other vehicles.

7 A. I have one of the exemplars that he brought  
8 and allowed me to keep, and both sides of that  
9 connector were attached to the steering column.

10 Q. Did you ever conduct any experiments of the  
11 operation of the parking position switch before the  
12 inspection in Georgia on the day when the parking  
13 position switch harness was found to be disconnected?

14 A. I did not.

15 Q. Did anybody?

16 A. Richard Clarke may have.

17 Q. You've looked at Mr. Clarke's file?

18 A. I have seen his deposition. I haven't seen  
19 his file.

20 Q. Okay. The parking position switch and its  
21 wiring harness were not, in your mind, an issue in this  
22 case until the inspection when the fascia under the  
23 subject steering column was removed and the parking  
24 position switch wiring harness was found to be  
25 disconnected, true?

1           A.    If I understand you correctly, I believe  
2   that is true.  You may need to specify exactly what you  
3   mean by the parking position switch.

4           Q.    Do you know what I mean by parking position  
5   switch?

6           A.    Well, right now I'm assuming that you mean  
7   the switch on the side -- or the connector on the side  
8   of the steering column.

9           Q.    No.  The parking position switch is the  
10  switch that is mounted on the transmission -- excuse  
11  me.  The gearshift lever assembly that is actuated when  
12  the gearshift lever is moved to park rest.  In other  
13  words, it's moved to the park position and the spring  
14  is allowed to push it to the left.

15          A.    So you're talking about the locking  
16  mechanism, the pawl, as I have called it in my report.

17          Q.    No, the pawl is a different structure.

18          A.    Some of these things have different names  
19  depending on what --

20          Q.    Not if you read the service manual and the  
21  drawings.  So have you looked at the service manual?

22          A.    I don't believe I have looked at the service  
23  manual.

24          Q.    Have you looked at any drawings for any of  
25  these components?

1           A.    I have looked at drawings for some of the  
2 connectors.

3           Q.    Where did you get those?

4           A.    I looked at those on the KET site, which is  
5 the manufacturer of those connectors.

6           Q.    Have you looked at any diagrams that  
7 identify the system by which the ignition cylinder is  
8 prevented from being turned to off lock unless the  
9 gearshift lever is in the park rest position?

10          A.    I believe that we may have some of those  
11 diagrams, but they were not very elaborate or detailed  
12 in the ones that we have.

13          Q.    I didn't ask you what you have. I asked you  
14 what you looked at.

15          A.    I believe that we have some wiring diagrams,  
16 but I don't believe that they're the ones you're  
17 speaking of.

18          Q.    By what means is the ignition cylinder  
19 prevented from being turned to the off lock position  
20 unless the gearshift lever is in park rest?

21          A.    There's an electrical connection between the  
22 shift lever, and if the shifter is in park, then you  
23 can switch the ignition to the lock position and remove  
24 the key.

25          Q.    Where is the switch?

1           A.    There's a switch in the -- there should be a  
2   switch in the shift mechanism, and then there's wiring  
3   that goes from the shift mechanism to the steering  
4   column, and that goes through the connector that we  
5   have been talking about.

6           Q.    You said there should be. I'm not asking  
7   about what there should be. Mikaela Shiffrin should  
8   have won the gold medal, but she didn't. I'm asking  
9   what is.

10           So where is the switch in question, the one that  
11   is associated with the gearshift lever and that is used  
12   to prevent the ignition cylinder from being turned to  
13   the off lock position?

14           MR. LOWE: Objection.

15           A.    I would have to look at the exemplar again.  
16   Again, you're getting into areas that are more for  
17   Mr. Clarke to comment on.

18   BY MR. SPENCER:

19           Q.    What kind of switch is it?

20           MR. LOWE: Objection.

21           A.    I would have to look at it.

22   BY MR. SPENCER:

23           Q.    Do you have -- you haven't done that, so you  
24   can't answer the question, just to save time, true?

25           A.    That's not something I investigated as part

1 of this.

2 Q. So you don't know, right?

3 A. Well, I could tell you. As I sit here, I  
4 would have to look up that information.

5 Q. At this moment in time, you don't know  
6 because you'd have to look it up, fair?

7 A. For the specific switch and specific model  
8 and location of that switch, yes, I'd have to look that  
9 up.

10 Q. Now, your original theory in this case -- by  
11 the way, when were you retained?

12 A. We have a case initiation date of  
13 August 23rd, 2017.

14 Q. The initial theory in this case, at least  
15 according to the complaint, is that the stop lamp  
16 switch was defective in this vehicle. Is that your  
17 understanding?

18 A. I don't remember reading the complaint, but  
19 I wouldn't argue with you.

20 Q. You certainly, when you were retained,  
21 understood that was the initial theory, correct?

22 A. Well, we were doing an investigation to  
23 determine how this accident occurred.

24 Q. And that was the theory you were  
25 investigating?

1           A.    That wasn't necessarily the theory I was  
2    investigating. We were looking at the system to see  
3    what the evidence showed.

4           Q.    You said it was not necessarily the theory.  
5    Was it the theory?

6           A.    I didn't have a preconceived theory when I  
7    went into the investigation. We were looking at  
8    possibilities of why the key could be removed from the  
9    ignition, and why the shifter could be in drive and the  
10   key out.

11          Q.    When did you eliminate the stop lamp switch  
12   theory?

13          A.    I don't recall.

14          Q.    Did you eliminate that, or did Mr. Clarke  
15   eliminate that?

16          A.    It may have been Mr. Clarke that eliminated  
17   that.

18          Q.    At some point another theory arose, and that  
19   concerned the design of the ignition cylinder itself  
20   and the compatibility of the metals within on the one  
21   hand, and the metals of the keys on the other hand,  
22   true?

23          A.    I don't recall necessarily having that  
24   theory. That is a failure mechanism that we have seen  
25   in other cases.



1           Q.    So it was at least a possible theory that  
2   you were entertaining?

3           A.    It would be a consideration of things to  
4   look at.

5           Q.    When did you rule that out?

6           A.    Well, when we're examining the evidence and  
7   we can see that the key may not be able to be removed  
8   and in positions where it shouldn't be.

9           Q.    In fact, you never even disassembled an  
10   ignition cylinder and performed tests of the metals  
11   within or the metals of the keys, correct?

12          A.    Not in this case.

13          Q.    All right. Because you went in another  
14   direction; namely, the direction of the wiring harness,  
15   correct?

16          A.    Well, we followed the evidence in the  
17   findings that we had produced during the inspections.

18          Q.    Well, kind of not. I mean, the complaint  
19   had been filed long before you did your analysis,  
20   hadn't it?

21                   MR. LOWE: Objection.

22   BY MR. SPENCER:

23          Q.    Hadn't it?

24          A.    Probably so, yes.

25          Q.    Yeah. So in some respects, you would agree

1 as a scientist, it's a question of shooting first and  
2 asking questions later?

3 MR. LOWE: Objection.

4 A. Again, that's not my area to comment on.  
5 I'm here to present the information that I found.

6 BY MR. SPENCER:

7 Q. Well, you're a scientist, aren't you?

8 A. I would say so.

9 Q. You know what the scientific method is,  
10 don't you?

11 A. Basically, yes.

12 Q. You look at the data, and you follow the  
13 data and form a hypothesis, correct?

14 A. Yes, basically. You gather data, you write  
15 down the information, and you compile that data, review  
16 it, and see how it fits into, at least in an accident  
17 investigation, what may have caused the accident.

18 Q. There's a whole series of steps in the  
19 scientific method, correct?

20 A. There are steps, yes.

21 Q. Sure. And if you're following the  
22 scientific method, you don't form your conclusions  
23 until you get to the end of the process, correct?

24 A. You have to continually review your  
25 information as you go so that you can focus your

1 efforts in an investigation like this.

2 Q. And at the end of the process that one is  
3 supposed to follow using the scientific method, that's  
4 when you come to your conclusions, correct?

5 A. That's when we usually write our report and  
6 formulate our final opinions.

7 Q. Right. But in this case, the conclusion  
8 that one or more of the Hyundai companies was  
9 responsible was formed before the data had been  
10 gathered and analyzed, correct?

11 MR. LOWE: Objection.

12 A. You know, you're getting into legal aspects.  
13 We know that the car should not be able to be turned  
14 off and the key removed from the ignition with the  
15 gearshift selector in drive.

16 BY MR. SPENCER:

17 Q. I'm really just getting at the scientific  
18 method process. You would agree with me that if the  
19 complaint were filed before you did your analysis, that  
20 the conclusion is inescapable that at least somebody  
21 determined that one of the Hyundai companies must be  
22 liable before the scientific method ran its course?

23 A. I'm sure that's a possibility of people that  
24 could be responsible, but we have to go through the  
25 investigation process to know that for sure one way or

1 another.

2 Q. Now, when did you become aware that an  
3 aftermarket radio had been installed in this vehicle?

4 A. Probably at the October inspection.

5 Q. The October 2017 inspection?

6 A. Yes.

7 Q. Where in Georgia was that? I can't ever  
8 remember. I said it was in Braselton and Clarke got  
9 all huffy with me. So where was it?

10 A. I saw the vehicle at Richard Clarke's place  
11 in Braselton the day before when he was loading it up  
12 because I was looking at another vehicle, but it was at  
13 Buckner Automotive in Alpharetta, I believe.

14 Q. What's the name, Buckner?

15 A. Buckner.

16 Q. Butner, B-u-t-n-e-r?

17 A. Buck.

18 Q. B-u-c-k-n-e-r.

19 A. I'm sorry. It's Buckingham Automotive,  
20 Alpharetta, Georgia.

21 Q. What was the date on which the inspection  
22 was conducted in October 2017 at Buckingham Automotive?

23 A. October 26th.

24 Q. So you first realized there was an  
25 aftermarket radio in the vehicle on October 25,

1 correct?

2 A. I don't know if I realized it was  
3 aftermarket then or not. I can't remember if we  
4 discussed that prior to that date or on that date.

5 Q. Well, you certainly saw the radio, and  
6 whether you realized then it was aftermarket or not is  
7 not something you're sure about, correct?

8 A. That's correct.

9 Q. All right. Fair. When did you realize for  
10 sure -- let me start over again.

11 As you sit here today, what's the earliest point  
12 that you recall realizing there's an aftermarket radio  
13 in this vehicle?

14 A. Probably October 26th.

15 Q. And that's when Mr. Webster and Mr. Cooper  
16 were present, correct?

17 A. Mr. Cooper was there, and I never can  
18 remember the name of the other gentleman, but I believe  
19 it's Mr. Webster.

20 Q. The gentleman from Hyundai America is  
21 Mr. Webster.

22 A. Okay.

23 Q. That's who you're talking about?

24 A. Yes.

25 Q. All right. Great. So on October 26 is when

1 the fascia was removed from under the steering column  
2 of the subject vehicle, correct?

3 A. Yes.

4 Q. That's when you saw that there was a wiring  
5 harness that was no longer connected, true?

6 A. There was a wiring connector that was no  
7 longer connected, that's right.

8 Q. Sure. The male plastic connector was  
9 supposed to be mated with the female plastic connector,  
10 but they were hanging loose, correct?

11 A. That's correct.

12 Q. And that's when you also noticed the wire,  
13 the cord that ran from the aftermarket radio to the top  
14 of the A-pillar on the driver's side, correct?

15 A. There is a microphone cord that runs from  
16 the aftermarket radio to the microphone in the  
17 A-pillar.

18 Q. Sure. You saw that microphone cord on  
19 October 26, correct?

20 A. I did.

21 Q. And you saw that it ran right past the area  
22 where the connector had been parted, correct?

23 A. I would not say it was right past. It was  
24 forward of that with respect to the vehicle, and it was  
25 zip-tied to some other location. So it wasn't exactly

1       laying over those components or anything like that.

2               Q.     Right. It was up above where the connector  
3       would have been had the connector still been mated?

4               A.     It was forward of it, from my memory.

5               Q.     And above it?

6               A.     It was in the vicinity, but it was not right  
7       next to it.

8               Q.     Sure. It was a little forward, but  
9       definitely above it, correct?

10              A.     As far as its height above, it was  
11       forward -- it may have been above because it has to  
12       come down from the radio and it goes under the  
13       instrument panel and then back up to the A-pillar.

14              Q.     You documented the position of the cord,  
15       didn't you?

16              A.     I did. I have photographs.

17              Q.     And the zip tie that held that cord into  
18       place, correct?

19              A.     I did.

20              Q.     So anybody can look at those photographs and  
21       tell exactly where that cord was, can't they?

22              A.     Yes. If you'd like to bring them up, we can  
23       look at them.

24              Q.     It's not necessary. Now, at that point you  
25       had an explanation for the reason why the ignition

1 cylinder could be turned to off lock and the key  
2 removed when the gearshift lever was in a position  
3 other than park lock, true?

4 A. Yes, that was determined at that inspection.  
5 Well, not for certain. We observed the effects of it  
6 at that inspection, and then we had to test it further  
7 at the inspection that we had in my laboratory at  
8 McSwain Engineering.

9 Q. In January of 2018?

10 A. Yes.

11 Q. But as of October 26, 2017, you had a pretty  
12 good hypothesis for why one could turn the ignition  
13 cylinder to off lock and remove the key when the  
14 gearshift lever was in a position other than park rest,  
15 true?

16 A. If I understand your statement, yes, that is  
17 true. But, again, our scientific method, we had to  
18 test and confirm that.

19 Q. Now, you don't believe there's a design  
20 defect in the wiring harness or the connectors, do you?

21 A. Well, as far as the automotive design, that  
22 may be an issue for Mr. Clarke to address. But as far  
23 as a specific design defect for one of the components,  
24 no.

25 Q. You're not going to say there's a design



1 defect in the vehicle, are you?

2 A. That would be for Mr. Clarke to address  
3 anyway.

4 Q. And you understand from Mr. Clarke's  
5 deposition that he says that as far as he's concerned,  
6 he's not going to express any opinion that there's a  
7 design defect, only that there was a problem in the  
8 assembly of the connectors at the plant?

9 MR. LOWE: Objection.

10 A. I don't remember specifically what he said,  
11 but the assembly is an issue.

12 BY MR. SPENCER:

13 Q. Now, once you-all found that the wiring  
14 harness was disconnected, there became two  
15 possibilities for assigning fault. One was that there  
16 was a fault in the assembly of the vehicle, and the  
17 other was that there was a fault in someone who had  
18 disassembled the connectors, true?

19 MR. LOWE: Objection.

20 A. That was a possibility.

21 BY MR. SPENCER:

22 Q. They're the only possibilities; either they  
23 weren't connected properly at the factory, or somebody  
24 disconnected them later, correct?

25 MR. LOWE: Objection.

1           A.    Well, there may be some other ways that they  
2    could become disconnected, but those are two important  
3    considerations to investigate, yes.

4    BY MR. SPENCER:

5           Q.    And as you sit here today, you can't think  
6    of any other way in which these things could become  
7    disconnected apart from either, one, they weren't  
8    firmly mated at the plant; or two, somebody  
9    disconnected them?

10          A.    Well, they could have been pulled apart, but  
11   that would generate a fracture, which we don't see. So  
12   there's some other possibilities. Or the wires could  
13   have been pulled out of the back of the connector,  
14   again, which would probably generate a fracture.

15          Q.    But we don't have any evidence of that  
16   either?

17          A.    That's right. Those are things that you  
18   would consider, and you rule them out based on the  
19   evidence that you are presented or see.

20          Q.    Sure. So in this case, really, you were  
21   presented with only two possibilities given the  
22   evidence that you had as of October 26, 2018 (sic).  
23   Either --

24               MR. LOWE: 2017.

25   BY MR. SPENCER:

1 Q. 2017. Thank you. Either, one, they were  
2 not firmly mated at the plant, or two, somebody  
3 disconnected them later, true?

4 MR. LOWE: Objection.

5 A. Yes, those are two theories that are  
6 possibilities.

7 BY MR. SPENCER:

8 Q. The two theories in this case?

9 A. I would say the primary two possibilities.  
10 There may be another way, but I can't think of any  
11 right now.

12 Q. By October 26, 2017, the statute of  
13 limitations had run on claims against whoever put in  
14 the aftermarket radio, hadn't it?

15 MR. LOWE: Objection, calls for a legal  
16 conclusion. He's not a lawyer.

17 A. I wouldn't know that.

18 BY MR. SPENCER:

19 Q. Did anybody ever discuss the possibility of  
20 going after the people who put in the aftermarket  
21 radio?

22 A. I believe we discussed who put it in, but as  
23 far as legally assigning responsibility, that's not for  
24 me to decide.

25 Q. I understand that. But in what context did

1 you have this discussion about who put in the  
2 aftermarket radio?

3 A. Well, that there was an aftermarket radio  
4 present, and we were wondering who put it in, and had  
5 discussions, I believe, with Mr. Clarke about what  
6 would be required to install an aftermarket radio.

7 Q. Did you have it in mind as you did the  
8 remainder of your analysis after October 26, 2017, that  
9 the only way to maintain a case against one of the  
10 Hyundai entities was to try to show that there had been  
11 a problem at the factory?

12 MR. LOWE: Objection.

13 A. No. I report what the results of our  
14 analysis are, whether it's good or bad, or assigns  
15 blame or responsibility -- I don't assign blame or  
16 responsibility, but we take what the evidence shows us.  
17 BY MR. SPENCER:

18 Q. Did anyone have such discussions in your  
19 presence?

20 A. No.

21 Q. Did you read any such discussions that  
22 anybody else had on any kind of screen --

23 A. Not --

24 Q. -- like e-mail?

25 A. Not that I recall, no.

1 Q. Do you have your bills?

2 A. I did put together a billing notebook. That  
3 is usually not part of our case file, but I did put one  
4 together.

5 Q. I appreciate that. Thank you. We'll look  
6 at it in a little bit.

7 Do you do fire investigations?

8 A. I do generally metallurgical analysis and  
9 failure analysis and materials engineering analysis.  
10 Occasionally fires are part of that, but not  
11 specifically the things a fire investigator would do.

12 Q. Are you familiar with the NFPA methodology  
13 for fire investigation?

14 A. Yes, and I reference that because it has a  
15 good, concise description of the scientific method as  
16 it relates to an investigation.

17 Q. It does. Do you have a copy of it here, by  
18 any chance?

19 A. I don't think I do.

20 Q. I do here. Unfortunately, it's on my  
21 screen. But do you want to take a quick look at it and  
22 see if this is --

23 A. I don't remember what your question was.

24 Q. There isn't one. So have you had a chance  
25 to briefly go through the copy of Chapter 4 of the NFPA

1 methodology that I showed you on my computer?

2 A. I have scrolled through it.

3 Q. I recognize you haven't read every word, but  
4 does that generally look like the scientific method  
5 description you and I were talking about a little while  
6 ago?

7 A. I don't have them side by side to compare,  
8 but that generally looks like what I remember.

9 Q. I'm going to mark that as an exhibit later.  
10 I've got some that are already numbered, so I don't  
11 want to mark it now because it will throw my numbering  
12 off. Is palm-reading a science?

13 A. No.

14 Q. Is palm-reading a science if you use a  
15 scanning electron microscope --

16 MR. LOWE: Objection.

17 BY MR. SPENCER:

18 Q. -- to look at the palm?

19 A. You're going to have to define what you mean  
20 by palm-reading. I mean, you can examine things with a  
21 scanning electron microscope.

22 Q. You've got palm-readers down here in  
23 Pensacola, right?

24 MR. LOWE: Objection.

25 A. I don't know.

1 BY MR. SPENCER:

2 Q. You've never heard of the process whereby  
3 you go and you pay a lady in a strip mall fifty bucks  
4 and she looks at your palm and tells your future?  
5 You've heard of that?

6 MR. LOWE: Objection.

7 A. I have heard of that. I don't know if we  
8 have any in Pensacola.

9 BY MR. SPENCER:

10 Q. I bet you do.

11 MR. LOWE: Objection.

12 BY MR. SPENCER:

13 Q. If a lady who was doing that happened to use  
14 a scanning electron microscope to look at the palm of  
15 one's hand to tell the future, you wouldn't consider  
16 that to be science, would you?

17 MR. LOWE: Objection.

18 A. Generally, no.

19 BY MR. SPENCER:

20 Q. Right. Whether and to what extent a  
21 scanning electron microscope yields scientific results  
22 depends on how you use it, true?

23 A. You have to have a skilled operator to use a  
24 scanning electron microscope, and you have to be able  
25 to interpret the data that you see.

1           Q.    In other words, you have to follow the  
2   scientific method?

3           A.    The use of the scanning electron microscope  
4   does not necessarily qualify or mean that you're using  
5   the scientific method, but that is a tool that we use  
6   to investigate as part of the scientific method.

7           Q.    To search for data and analyze data,  
8   correct?

9           A.    Yes. We obtain data and information from  
10   the scanning electron microscope and the things we  
11   observe in it.

12          Q.    Right. Now, in your examination of the  
13   subject vehicle on October 26, 2017 -- by the way, that  
14   was your first examination of that vehicle, or  
15   inspection of that vehicle, correct? You saw it the  
16   previous day, but you didn't really inspect it for the  
17   first time until October 26, 2017?

18          A.    Basically, yes.

19          Q.    Perfect. When was the next time you  
20   actually inspected the subject vehicle?

21          A.    We held an inspection at our laboratory here  
22   in Pensacola on January 10th and 11th of 2018.

23          Q.    Have you done any inspections of the subject  
24   vehicle or any of its components since then?

25          A.    We have reviewed the information that we



1 obtained from the inspection on the 10th and 11th. I  
2 have looked at the connector after the inspection, and  
3 we have taken some additional dimensions from the  
4 images and from the connectors.

5 Q. Since when?

6 A. Since the 10th and 11th inspection.

7 Q. Are any -- have you made any measurements  
8 other than those that are contained in your report?

9 A. I took some dimensions of the plastic parts  
10 of the connector that are not in my report.

11 Q. So the answer to the question is yes?

12 A. Yes.

13 Q. Have you done any measurements -- strike  
14 that.

15 Have you or anyone on your staff done any  
16 measurements of any parts of the subject vehicle's  
17 wiring harness other than the measurements that are  
18 shown in your report, and some dimensions of the  
19 plastic connectors that you took at a later date?

20 A. From the images of the -- no, I don't  
21 believe so.

22 Q. Okay. Great. Thanks.

23 A. There was some additional dimensions added  
24 to some of the scanning electron microscope images, but  
25 I think those are included in my report.

1           Q.    So if we wanted to know what measurements  
2           you or anyone in your lab have made and actually  
3           recorded, we would look either at your report or  
4           whatever record you have of taking some dimensions of  
5           the plastic connectors since January 10 or 11, true?

6           A.    Yes.

7           Q.    Thank you.  Now, if I understand your file  
8           correctly, the process that you followed in general was  
9           to take some overall photos of the vehicles and the  
10          connector using a normal lens, and then some macro  
11          photos, macro lens photos of the connector, then some  
12          photos using a stereomicroscope, then some photos using  
13          a Kencey, K-e-n-c-e-y, device --

14          A.    Keyence.

15          Q.    Keyence.  I'm sorry.  And then the SEM,  
16          correct, in that approximate order?

17          A.    Approximately, yes.

18          Q.    Okay.  Great.  Keyence is K-e-y-e-n-c-e?

19          A.    Yes, sir.

20          Q.    That's what I get for being an English  
21          major.

22                And so is it fair to say that going from regular  
23          lens camera photos, to macro lens camera photos, to  
24          microscope, to Keyence, to scanning electron  
25          microscope, you were using devices that can get higher

1 and higher levels of magnification, correct?

2 A. And they have other capabilities as well,  
3 but basically, yes.

4 Q. Particularly with respect to the scanning  
5 electron microscope, that actually creates an image of  
6 electrons, correct?

7 A. It uses electrons to generate an image, yes.

8 Q. You can change the way in which you look at  
9 those electrons, can't you? What I'm getting at, to be  
10 more specific and ask a better question is, you can  
11 look at backscatter and something else, correct?

12 A. Yes. You can look at backscattered  
13 electrons or secondary electrons.

14 Q. With the scanning electron microscope you  
15 have complete control over the area that is within the  
16 image, true?

17 A. I wouldn't say complete control. There's  
18 some limitations as to what areas you're looking at.  
19 You can only go down to a certain magnification, and  
20 you can only go up to a certain magnification, but the  
21 area that you look at defines what the magnification  
22 is.

23 Q. Sure. You determine what area of an object  
24 you put under the scanning electron microscope, true?

25 A. You can manipulate the object once you're

1 inside the chamber, so I think the answer to your  
2 question is yes.

3 Q. Okay. You can manipulate the magnification,  
4 correct?

5 A. Yes, you can change the magnification.

6 Q. Can you manipulate the angle at which you  
7 look at an object that's within the scanning electron  
8 microscope?

9 A. To a limited degree, yes. It depends on the  
10 geometry of the object.

11 Q. But you can look at it from straight down,  
12 and also various angles within the limitations of the  
13 microscope itself?

14 A. There is some limited angular adjustments  
15 that you can do.

16 Q. Now, at the end of the process that you  
17 followed that began with overall photos and ended with  
18 the scanning electron microscopy, how many measurements  
19 did you actually record, if you recall?

20 A. I don't recall a specific number.

21 Q. But we would see that in your SEM photos,  
22 wouldn't we?

23 A. Well, there are some that are in the SEM  
24 photos, and that was what I was telling you earlier; we  
25 went back to some of the other photos and added some

1 measurements as well.

2 Q. And those would be in your report?

3 A. Yes, they would be in my report, and they're  
4 also in my deposition notebook, and in the information  
5 that I have here with me today.

6 Q. Can you just flip through there for me and  
7 tell me how many measurements you made at the end of  
8 this process? Do you mind if I come around?

9 A. I do not. Are you talking about in the  
10 scanning electron microscope, I'm assuming?

11 Q. Well, those are the only images on which you  
12 made any measurements, true?

13 A. As far as the blade connectors, yes. But  
14 we -- I did some -- I did go back and make some  
15 measurements from the Keyence microscope images when I  
16 was comparing them to the drawings from KET. I have  
17 those in here as well.

18 Q. Well, let me grab your binder and let me  
19 take a look at what you've got because there's some new  
20 stuff.

21 MR. LOWE: It's also all on your thumb  
22 drive, if you want. Whatever is easier.

23 MR. SPENCER: Thanks. Just give me a  
24 minute, real quick.

25 BY MR. SPENCER:

1 Q. According to your report -- where is your  
2 report in this binder?

3 A. It's toward the back. There's a tab called  
4 Report.

5 Q. I see. How do you like to do the exhibit  
6 copying? Is that something that Cindy does, or what,  
7 or is it already on the thumb drive?

8 A. I think everything in that notebook is on  
9 the thumb drive, and also my photos. Like I said, I  
10 don't have some of the documents received. I don't  
11 have the depositions, and I don't have the CT data.

12 Q. I was going to ask you about the CT data.  
13 Where is it?

14 A. It is -- there's a copy of it in here.

15 Q. In the binder that I'm holding?

16 A. In the binder. The CT data was of the  
17 exemplar.

18 Q. Where is the CT data -- where is the  
19 electronic version of the CT data?

20 A. There's a copy in here, but it has to be on  
21 a flash drive of its own because it's so large.

22 MR. SPENCER: What we will do, Cindy, I want  
23 you to make a list -- I'll try to make a list,  
24 we can do it together, of the exhibits, and then  
25 toward the end of the deposition we'll decide

1           which ones we're going to have electronically  
2           and which ones we're going to have as physical  
3           copies. Okay?

4           MR. LOWE: The idea was to make it so that  
5           you would have everything on the flash drive and  
6           that way you could copy whatever you wanted.

7           MR. SPENCER: Sure, which is great. What I  
8           think I'm going to maybe do, is maybe edit the  
9           names on the flash drive to put the exhibit  
10          numbers on them, you can then have a copy of  
11          that with the exhibit numbers on them, I can get  
12          a copy of that, she can get a copy of that, and  
13          then everybody knows what the exhibit numbers  
14          are.

15          MR. LOWE: How swell is that?

16          MR. SPENCER: That's what I'm going to do.

17 BY MR. SPENCER:

18          Q. So your report is in the binder, and are you  
19          telling me that an exact copy of the report is on the  
20          flash drive as well?

21          A. Yes, I think everything in that notebook,  
22          sort of arranged in the order of the tabs, or with the  
23          tab labels, is on the flash drive.

24          Q. So your report is going to be Exhibit 1. As  
25          we look through your report together, I count, using

1 the scanning electron microscope, two measurements on  
2 Enclosure 6, 12.35 millimeters and 12.26, correct?

3 A. Yes. There's also measurements on this  
4 image too.

5 Q. You're correct. And that's two more  
6 measurements on exemplar blue, 14.86 and 14.75  
7 millimeters, correct?

8 A. Yes.

9 Q. Then there are no measurements called out on  
10 Enclosure 7, correct?

11 A. That's right.

12 Q. Two measurements called out on Enclosure 8,  
13 one of .62 millimeters on subject blue, and another of  
14 3.23 millimeters on exemplar blue, correct?

15 A. Yes.

16 Q. No measurements called out on Enclosure 9,  
17 correct?

18 A. That's correct.

19 Q. And that's the end of the scanning electron  
20 microscope pictures in your report, correct?

21 A. In the report, yes, but there is more images  
22 that we took. And there's a table of data that you  
23 were looking at before that has a complete list of all  
24 the measurements that we had as far as the blades --  
25 the contact marks on the blades.



1           Q.    So at least in your report, as we look at  
2   the enclosures that relate to the scanning electron  
3   microscopy, we can see only six measurements called  
4   out, correct?

5           A.    I believe that's right.

6           Q.    Now, you talked about a table. Where is  
7   that table? It's not in your report, is it?

8           A.    I summarized the data from the table in my  
9   report, but this is the table you were looking at  
10  before. It's in the tab called Dimensional Analysis.

11          Q.    Where in your report is that summary?

12          A.    On Page 7, the third full paragraph from the  
13  top.

14          Q.    That's the paragraph that begins, "The  
15  contact areas on the subject blades were examined,  
16  documented, and measured," correct?

17          A.    Yes.

18          Q.    And that paragraph refers only to the  
19  measurements that are shown on Enclosures 6 through 9,  
20  correct?

21          A.    It does. Those are examples of the  
22  measurements that were taken, and that's why I say this  
23  is summarized. We're talking about the average of  
24  those numbers, and that data is in the table that we  
25  just talked about.

1           Q.   Well, in fairness, Mr. Carden, I'm going to  
2   tell you, if it's not in your report, it doesn't exist  
3   for purposes of this case. That's going to be my  
4   position. I take the Federal rules pretty seriously.

5           MR. LOWE: Objection.

6   BY MR. SPENCER:

7           Q.   So anywhere in your report are there any  
8   measurements of features on the blades other than the  
9   six that we've identified?

10          A.   Again, that information is summarized in the  
11   report, and that information that I presented in the  
12   report is a compilation that was generated from the  
13   data table.

14          Q.   The data table was not in your report, true?

15          A.   That specific data table that we were  
16   looking at is not in the report. I said that I  
17   measured those dimensions. I did not specifically give  
18   each individual measurement in the report.

19          Q.   When did you do the additional measurements  
20   that were not mentioned in the report?

21          A.   Well, some of them were done during the  
22   inspection, and some of them were done after the  
23   inspection.

24          Q.   Well, we had an agreement that you were  
25   going to provide us with all of the images that you had

1 done on January 10 or 11, and we were going to do  
2 likewise, didn't we?

3 A. Right, and I did provide those images. I  
4 did image analysis on those images, as anybody else  
5 could, using the scale bar in the image and the  
6 calibration of that image to make additional  
7 measurements.

8 Q. In fact, during your work on the scanning  
9 electron microscope, you were taking dimensions, but  
10 not recording them in images, weren't you?

11 A. There were -- I was measuring dimensions,  
12 some of which I embedded into the images, and some of  
13 which I did not.

14 Q. And put another way, in layman's terms, you  
15 recorded some of the measurements, and you chose not to  
16 record others?

17 A. Well, it depends on what the measurements  
18 are. There is measurements that I took on the scanning  
19 electron microscope that I did not report here too.

20 Q. Exactly.

21 A. And there's some, at least one that I can  
22 think of, that was recorded and put on the image that I  
23 didn't refer to in my report.

24 Q. Why would you take measurements using the  
25 scanning electron microscope but not make a record of

1       them?

2               A.     Usually we do.

3               Q.     Why?

4               A.     Well, it depends. Once you burn that into  
5       the image, then you can no longer see what is  
6       underneath the information that you burned onto it.

7               Q.     Well, sure you can. You can make a copy as  
8       you did with SEM-094.

9               A.     Exactly. That's what I'm getting at. I  
10      usually take an image, and then if I'm going to take a  
11      dimension, I either take it at the time that I'm doing  
12      the images on the SEM and burn the information in the  
13      image, or I will do it after the fact. I can do it  
14      after the fact to save time during the inspection.

15              Q.     I guess what I'm wondering is, why were you  
16      taking measurements on January 10 and 11 and not making  
17      a record of them on that particular occasion?

18              A.     I don't remember which dimensions that you  
19      are talking about. In some cases, especially in these  
20      images, locating the end of the contact mark, you had  
21      to zoom in on it, and when you zoom in on it, you can't  
22      see the other end of the tip of the connector. So I  
23      was measuring and then going back and forth to confirm  
24      I was in the right location. So any of those I was not  
25      recording is probably that process.

1 Q. Now, where is this new table?

2 A. It's in the dimensional analysis tab. I  
3 wouldn't say it's a new table. It was a table that I  
4 compiled when I was writing my report.

5 Q. But you didn't provide it with your report,  
6 right?

7 A. I provided the information that I surmised  
8 from that table in my report.

9 Q. Well, you didn't, because on this table that  
10 I'm looking at, it says, Contact Mark Measurement Data  
11 From SEM Measurements, and there are one, two, three,  
12 four, five, six, seven, eight, nine -- make sure I got  
13 that right. One, two, three, four, five, six, seven,  
14 eight, nine, ten, eleven, twelve, thirteen, fourteen  
15 measurements on this table, right?

16 A. Yes.

17 Q. You don't think 14 and six are the same  
18 number, do you?

19 MR. LOWE: Objection.

20 A. No, I don't. Some of those measurements  
21 were taken on an exemplar connector that was done after  
22 the inspection.

23 BY MR. SPENCER:

24 Q. So of the subject -- let me ask you this:  
25 You would agree with me there are only six measurements

1 mentioned in your report, correct?

2 A. No. That's what I'm saying, the data that  
3 was generated is mentioned in my report. I did not  
4 itemize each individual dimension, but I did show  
5 examples of the dimensions that I took in the  
6 enclosures that you spoke about.

7 Q. Mr. Carden, count for me in your report the  
8 number of measurements that you reported in  
9 millimeters.

10 A. In --

11 Q. In your report, Mr. Carden.

12 A. I have to go back and look --

13 Q. I'll miss my plane. We're going to take all  
14 day if I have to, but I want you to acknowledge what we  
15 all know is true, and you know is true, which is that  
16 you only have six measurements recorded in your report  
17 using SEM analysis of the blades, true?

18 MR. LOWE: Objection.

19 A. If that is what we just counted on the  
20 enclosures. I'd have to go back and confirm that. I  
21 showed examples of --

22 BY MR. SPENCER:

23 Q. Take your time --

24 A. -- how they were measured.

25 MR. LOWE: He's entitled to answer your

1 question.

2 BY MR. SPENCER:

3 Q. Take your time and go back and confirm it  
4 because I want you to acknowledge on the record in  
5 words of one syllable that there are only six  
6 measurements in your report.

7 MR. LOWE: Objection. He's entitled to give  
8 a full response to the question.

9 MR. SPENCER: I'm entitled to get a complete  
10 answer. And I'll be here 'til tomorrow if we  
11 have to, Mr. Carden.

12 MR. LOWE: You're entitled to a complete  
13 answer.

14 A. You have my report. If you want to come  
15 through --

16 Q. You count them.

17 MR. LOWE: Objection. He's trying to answer  
18 your question and you keep interrupting him.

19 BY MR. SPENCER:

20 Q. Go ahead and count them.

21 MR. LOWE: He's entitled to give a complete  
22 response.

23 MR. SPENCER: I agree to that, and I'm  
24 entitled to an answer, a straight one.

25 MR. LOWE: Objection to the commentary.

1           A.    Again, on Page 7 my report says, "Comparison  
2   with exemplar connectors in corresponding locations  
3   revealed that contact marks in the areas of subject  
4   connector blades were approximately 2.4 inches  
5   shorter." That is a compilation of that data.

6   BY MR. SPENCER:

7           Q.    That's not my question.

8           A.    I'm trying to finish answering your  
9   question.

10          Q.    My question is very simple. Let me restate  
11   it. How many specific measurements are reported in  
12   millimeters in your report using scanning electron  
13   microscopy?

14          A.    In the enclosures of the report there's one,  
15   two, three, four, five, six. Six specific ones. That  
16   does not encompass all of the data that was reported in  
17   the text of the report.

18          Q.    Where are the 14 total measurements that are  
19   in the new table that has never been provided? Where  
20   are they specifically called out in your report,  
21   specifically mentioned in numerical millimeter terms?

22          A.    Again, they are summarized in the  
23   information that was provided on Page 7. They are not  
24   enumerated specifically in the table in the report.

25          Q.    Thank you. I wouldn't have known that the



1 table even existed from reading your report, would I?

2 MR. LOWE: Objection.

3 A. You would know that I had taken measurements  
4 and examined exemplars for comparison, and summarized  
5 that in the number that was presented in the report.

6 BY MR. SPENCER:

7 Q. I wouldn't know that you made 14  
8 measurements if I looked at your report, would I?

9 MR. LOWE: Objection.

10 BY MR. SPENCER:

11 Q. I'd just know you made six, true?

12 A. Those are examples of the measurements that  
13 were taken.

14 Q. I know that now, but you didn't say that  
15 then, did you?

16 MR. LOWE: Objection.

17 A. I don't recall that it says that in the  
18 report.

19 BY MR. SPENCER:

20 Q. In fact, your report specifically refers to  
21 specific measurements that are in Enclosures 6 through  
22 9, right?

23 A. Yes. Those are examples of the measurements  
24 that were taken in the scanning electron microscope.

25 Q. It doesn't say examples in your report, does

1 it, Mr. Carden?

2 A. I don't think I used that word.

3 Q. Right. So I wouldn't have known that you  
4 had done 14 measurements when I read your report, would  
5 I?

6 MR. LOWE: Objection.

7 A. I don't think you would be able to come up  
8 with an exact number other than those measurements were  
9 taken and that information was provided in the report.

10 BY MR. SPENCER:

11 Q. Well, I wouldn't know that it would be 14  
12 measurements as opposed to six just from reading your  
13 report, in fairness, would I, Mr. Carden?

14 MR. LOWE: Objection.

15 A. I did not write the specific number. I said  
16 that I examined exemplars.

17 BY MR. SPENCER:

18 Q. Right, and made measurements as shown in  
19 Enclosures 6 through 9?

20 A. That was the nature of the measurements.

21 Q. Why did you conceal the other eight  
22 measurements?

23 MR. LOWE: Objection.

24 A. I'm not concealing anything. You have  
25 them --

1 BY MR. SPENCER:

2 Q. You're not now. I'm asking you why you  
3 concealed them then, and why didn't you include them in  
4 your report?

5 MR. LOWE: Objection.

6 A. I was not concealing anything.

7 BY MR. SPENCER:

8 Q. When did you prepare the table that is in  
9 the dimensional analysis tab?

10 A. In the days prior to submitting a report.

11 Q. So you could have provided the table to us  
12 if you wanted to?

13 A. I didn't include it in the report.

14 Q. But you could have?

15 A. Yes, I could have.

16 Q. When did you get the drawings that are  
17 included in the dimensional analysis?

18 A. Actually, I found those yesterday.

19 Q. And you did the -- wrote the markings on  
20 them yesterday?

21 A. Yes.

22 MR. LOWE: Are you referring to the KET  
23 drawings?

24 MR. SPENCER: I don't know what they are.  
25 They say KET on them. I don't know what they

1           are.

2           A.    I may have found the drawings the day  
3   before, but I wrote the numbers on them yesterday.

4   BY MR. SPENCER:

5           Q.    What makes you think these drawings are  
6   associated with this particular connector?

7           A.    On the connector it is stamped KET, that is  
8   Korean Electrical Terminals, I believe, is the name of  
9   the company. I looked through their catalog. In their  
10   catalog they have drawings. Those drawings match  
11   dimensions of the components.

12          Q.    Where did you find these?

13          A.    On the KET Web site.

14          Q.    Have you examined any physical connectors  
15   other than those from the subject vehicle and those  
16   that Mr. Cooper brought with him?

17          A.    Yes.

18          Q.    Tell me about that.

19          A.    I was provided an exemplar steering column  
20   by Mr. Clarke, and it had a connector on it as well.

21          Q.    What examination have you done of that  
22   connector?

23          A.    We have done similar examination on that  
24   connector measuring -- well, disassembling it first,  
25   and measuring the contacts. We've done radiography and

1 CT scanning of that exemplar. We've taken the geometry  
2 of that and put it into a model, and show how the  
3 connector fits together.

4 Q. When did you do that work?

5 A. That was prior to writing the report.

6 Q. But it's not mentioned in your report?

7 A. Yes, it is.

8 Q. Where?

9 A. It says, "Exemplar examinations, analysis of  
10 CT data, and comparisons with the subject connector  
11 indicate that the subject connector is not fully  
12 engaged in its locked position at the time the subject  
13 vehicle was manufactured as shown in Enclosures 10  
14 through 12."

15 Q. You're referring to the same paragraph we  
16 discussed on Page 7 of your report, correct?

17 A. That's the second part of that paragraph.

18 Q. Well, it's the same paragraph.

19 A. It's the same paragraph, but it's not the  
20 complete paragraph. And in Enclosures 10, 11, 12,  
21 there are models that were generated from the CT data  
22 that show the engagement of the connector.

23 Q. And you're talking about -- what you're  
24 telling us, then, is that you used a CT examination of  
25 the Clarke exemplar connectors to create the models

1 that we see in Enclosures 10 through 12 of your report;  
2 is that right?

3 A. Yes.

4 Q. Did you make any measurements of features on  
5 the blades of the Clarke exemplar connectors like those  
6 that you made using the scanning electron microscope of  
7 the subject connectors and the Cooper connectors?

8 A. Yes.

9 Q. Those aren't mentioned in your report, are  
10 they?

11 A. Again, we've been over that. That is  
12 summarized in the data that we were talking about.

13 Q. It's not in your report, though, is it?

14 A. The specific numbers are not in there, but  
15 that reference to the 2.4 millimeters is a synopsis of  
16 that data. When you're talking about the table that we  
17 were looking at before, that data is included in that  
18 table.

19 Q. Where does it say clearly, or so that anyone  
20 could appreciate it, I, Bill Carden, have put blades  
21 from another exemplar, namely the Clarke exemplar, into  
22 the scanning electron microscope and done measurements?  
23 Where is that in your report?

24 MR. LOWE: Objection.

25 A. Again, on Page 7 in the paragraph above the

1 one that we were talking about, it says, "Ignition lock  
2 solenoid connectors" -- I'm sorry. Starting with -- it  
3 says, "Exemplar ignition lock: Solenoid connectors  
4 were examined for comparison with the subject  
5 connector. The following laboratory examinations were  
6 performed on the exemplar ignition lock solenoid  
7 connectors: Visual examination of photography, stereo  
8 microscopy, scanning electron microscopy, X-ray  
9 dispersive, radiographic inspection, X-ray computed  
10 tomography, and operational assessment."

11 BY MR. SPENCER:

12 Q. And yet looking at the enclosures, we would  
13 reasonably believe that the only measurements you had  
14 made using scanning electron microscopy are the six in  
15 your report --

16 MR. LOWE: Objection.

17 BY MR. SPENCER:

18 Q. -- Enclosures 6 through 9, correct?

19 MR. LOWE: Objection.

20 A. No, I don't think you could deduce that from  
21 this information. It says that I examined exemplars,  
22 and I performed similar examinations as I did to the  
23 subject components.

24 BY MR. SPENCER:

25 Q. You don't see a difference between examining

1 or eyeballing something and actually making  
2 measurements using the scanning electron microscope?  
3 You don't see any difference?

4 A. There is a difference, yes.

5 Q. Yeah. A fair report would have said  
6 specifically, I have made measurements not only of the  
7 subject blades and the Cooper blades, but also the  
8 Clarke blades. That would have been nice to know,  
9 wouldn't it?

10 MR. LOWE: Objection.

11 A. I said that I examined exemplars, so I did  
12 not enumerate them specifically, but I said that I  
13 examined exemplars and here is the methods that I used  
14 to examine them. And I gave a report of my findings.

15 BY MR. SPENCER:

16 Q. Were you purposely vague?

17 MR. LOWE: Objection.

18 A. No, sir, I was trying to be concise.

19 BY MR. SPENCER:

20 Q. I want to parse your report a little bit.  
21 We're talking about the third paragraph here. You  
22 use -- you refer in the second sentence of the third  
23 paragraph on Page 7 the words "subject connector  
24 blades," plural, correct?

25 A. Yes.



1 Q. Means more than one blade, correct?

2 A. Yes.

3 Q. There can only be two because that's all  
4 there are in the connector, correct?

5 A. That's correct.

6 Q. Then you say, "exemplar examinations,"  
7 plural, correct?

8 A. Yes.

9 Q. You don't say examinations of exemplars,  
10 plural, do you, sir?

11 A. It says, exemplar examinations.

12 Q. Right. It doesn't say how many exemplars  
13 you examined, does it?

14 A. Not in that sentence.

15 Q. In fact, nowhere in your report does it say  
16 that you conducted microscopic measurements of any  
17 exemplar other than the Cooper exemplar, correct?  
18 You're pausing.

19 A. Well, I was looking in other areas of this  
20 page. Here it says, "Exemplar ignition lock solenoid  
21 connectors were examined."

22 Q. Sure. And Mr. Cooper had two connectors,  
23 right, male and female?

24 A. It is -- I was looking at the connectors as  
25 a unit. There is components to connectors.

1 Q. Where in your report does it say, I, Bill  
2 Carden, have conducted microscopic measurements of the  
3 Clarke exemplar blades?

4 A. It doesn't say those specific words. It is  
5 implied in the information that I provided.

6 Q. Well, it's implied to you because you knew  
7 about it --

8 MR. LOWE: Objection.

9 BY MR. SPENCER:

10 Q. -- right?

11 A. I conducted those, yes.

12 Q. And you knew all about it, didn't you?

13 MR. LOWE: Objection. What are you --

14 A. Yes. I compiled that information and I  
15 summarized it in my report.

16 BY MR. SPENCER:

17 Q. Let me just be fair. I'm not trying to be  
18 combative with you. I'm just speaking plainly. I  
19 think you sandbagged us.

20 MR. LOWE: Objection and --

21 BY MR. SPENCER:

22 Q. And I want --

23 MR. LOWE: -- nonsense.

24 BY MR. SPENCER:

25 Q. And I think you did it on purpose. What I'm

1     trying to do is give you an opportunity to demonstrate  
2     to me that I'm wrong.

3             A.     That's what I'm trying to do here, sir. I  
4     was not trying to hide anything from you. I have  
5     brought everything that I have in my case file with me  
6     today, and I have brought the exemplars to look at. I  
7     am not trying to sandbag anybody. I'm trying to give  
8     you the information that I have.

9             Q.     In fairness, I want to give you this  
10    opportunity because I'm going to tell the judge you've  
11    sandbagged us, unless I change my mind.

12            MR. LOWE:   Objection to the colloquy.

13            MR. SPENCER: I'm just trying to be fair.

14            MR. LOWE:   Not really.

15            MR. SPENCER: Yeah, I really am.

16            MR. LOWE:   No, not really.

17    BY MR. SPENCER:

18            Q.     I want you to take as much time as you need  
19    to go through your report and point me to the place  
20    where I should have known that you took detailed  
21    scanning electron microscope measurements of the Clarke  
22    exemplar, or that you ever even disassembled the Clarke  
23    exemplar.

24            MR. SPENCER: Make a note, I want you to  
25                    specifically give me a recording of the time

1           between the end of that question and the time he  
2           begins the answer.

3           A.    I'm looking at my report on Page 6, and one  
4           thing that we -- if you want to discuss how I defined  
5           connector, on the bottom paragraph of Page 6 it says,  
6           "Examination revealed that the subject ignition lock  
7           solenoid connector consisted of a male and a female  
8           plastic housing." So I'm calling the housing, the male  
9           and female components, part of the connectors.

10          BY MR. SPENCER:

11               Q.   What other indication can you point to that  
12           you think would alert a reasonable person to the fact  
13           that you had disassembled the Clarke connectors and  
14           conducted scanning electron microscope measurements of  
15           those devices?

16           A.    On the following page, Page 7, I said,  
17           "Exemplar ignition lock solenoid connectors," plural,  
18           "were examined for comparison with the subject  
19           connector," singular.

20               Q.   Any others?

21           A.    In the -- below the itemized list of  
22           examinations and analyses that were performed, we  
23           talked about the contact areas on the subject blades  
24           were examined, documented, and measured. "Comparison  
25           with exemplar connectors," plural, "in corresponding

1 locations revealed that contact areas on the subject  
2 connector blades were approximately 2.4 millimeters  
3 shorter." That is a synopsis of those measurements in  
4 the, plural, connectors.

5 Q. How many blades were there with the Cooper  
6 connector?

7 A. Two blades.

8 Q. Right, plural.

9 A. But that is two blades from a singular  
10 connector.

11 Q. Anyplace else in your report that you think  
12 should have put a reasonable person on notice that you  
13 had disassembled the Clarke exemplar and conducted  
14 scanning electron microscope measurements of it?

15 A. The second sentence of the paragraph we were  
16 talking about before says, "The following laboratory  
17 examinations were performed on exemplar ignition lock  
18 solenoid connectors," plural.

19 Q. Anywhere else? Anything else?

20 A. Also, you have photographs of the blades  
21 from the connector from Eddie Cooper in the enclosures.

22 Q. We're not talking --

23 A. I'm trying to answer your question.

24 Q. We're not talking about the Cooper blades.  
25 We're talking about the Clarke blades.

1           A.    We also have the CT scan that very clearly  
2 shows another connector.

3           Q.    You're talking -- when you refer to the CT  
4 scan, you're referring to Enclosures 10 through 12,  
5 right?

6           A.    Yes.

7           Q.    Okay. Where in your report does it show a  
8 scanning electron microscope measurement of one of the  
9 Clarke blades?

10          A.    I don't have an SEM photograph in the  
11 enclosures of the Clarke blades, but I have provided  
12 them in my notebook here.

13          Q.    Today --

14          A.    Yes.

15          Q.    -- for the first time, right?

16          A.    Well, you have seen them for the first time  
17 here.

18          Q.    Yeah. Right. When did you do these  
19 measurements of the Clarke blades?

20          A.    In the days after the inspection.

21          Q.    Why didn't you let us know? I thought we  
22 had an agreement to exchange pictures.

23          A.    We agreed to exchange pictures from the  
24 inspection. These are exemplar analyses. Mr. Cooper  
25 had his own exemplar he could examine. He could get

1 all the exemplars that he wanted to and examine them if  
2 he wanted to be thorough in his investigation, as well  
3 as Mr. Rau.

4 Q. All right. So your report is Exhibit 1. Do  
5 you have a copy of the set of photographs that you  
6 actually provided to us pursuant to the agreement? Is  
7 that on your thumb drive?

8 A. I have all of the photos on my thumb drive,  
9 including those.

10 Q. I want to be really specific. I just want  
11 to know if there is on the thumb drive the same set  
12 of -- sets of photos that you sent me. So, for  
13 example, you provided us with a set of photographs  
14 marked DP-380 -- here's what I'm going to do.

15 MR. SPENCER: Let's go off the record for a  
16 second.

17 (A discussion was held off the record.)

18 BY MR. SPENCER:

19 Q. How many manufacturers were there of the  
20 connectors that were used in this generation of Santa  
21 Fe?

22 A. I don't know specifically.

23 Q. What makes you think that KET was a  
24 manufacturer?

25 A. KET is embossed on the side of the

1 connectors, and the connectors match connectors that  
2 they have on their Web site, and the drawings on their  
3 Web site.

4 Q. How many molds did KET have in the early --  
5 or the mid-otts (ph) to create the male plastic  
6 connector?

7 A. I don't know.

8 Q. How many molds did KET have in the mid-otts  
9 to create the female plastic connector?

10 A. You mean molds or mold cavities? Either  
11 way, I don't have a specific number. I haven't seen  
12 them.

13 Q. What are the tolerances for each of the  
14 dimensions of the male plastic connector?

15 A. Those are in the drawings.

16 Q. What are they?

17 A. Hand me the drawings and I'll look. Did you  
18 ask about the male or female?

19 Q. Male.

20 A. Part of this is in Korean, but if I read it  
21 correctly, the tolerances on the housing are plus or  
22 minus .2, plus or minus .25, and plus or minus .3,  
23 depending on, I believe, the length of the dimension.

24 Q. Millimeters?

25 A. The drawing is in millimeters.



1           Q.    What are the tolerances for the female  
2 plastic connector?

3           A.    They are the same tolerances, plus or minus  
4 .2, plus or minus .25, plus or minus .3.

5           Q.    So depending upon the dimension, you may  
6 have as much variation -- and assuming, of course, that  
7 each of the parts is manufactured within those  
8 tolerances, you may have as much as .6 millimeters in  
9 difference between two separate female connectors, and  
10 male connectors, for that matter?

11          A.    Well, this is for -- as I said, it says at  
12 the top of the tolerance box, .45 max. So it depends  
13 on what the dimension is. If it's a smaller dimension,  
14 then it has a tighter tolerance. So it's .2 if it's a  
15 small dimension.

16          Q.    If one is manufactured at the lower end of a  
17 tolerance, it could be .45 millimeters short, and if  
18 one is manufactured to the upper end of the tolerance,  
19 it could be .45 millimeters long, for a total  
20 difference of .9 millimeters, correct, in that  
21 particular dimension, hypothetically?

22          A.    I don't think your numbers are right.

23          Q.    I thought you said .45 millimeters.

24          A.    No, sir, I didn't. I said plus or minus .3  
25 for a large dimension. That's a 45 max.

1 MR. LOWE: .45.

2 A. No. If your dimension is 45 millimeters,  
3 then it could be off by a certain amount. So if you  
4 have a small dimension, something that is in the range  
5 of ten millimeters, then your tolerance will be plus or  
6 minus two.

7 BY MR. SPENCER:

8 Q. What are the tolerances for the blades?

9 A. Those tolerances are .15 and .2 for a 50  
10 millimeter max. There's other tolerances, but I don't  
11 believe we have any dimensions that are larger than  
12 that. I don't -- just scanning over the dimensions, I  
13 don't see any that are, except for the total length,  
14 that are over ten millimeters.

15 Q. We've been referring to blades. What do we  
16 call the other end of -- the connector on the other end  
17 that -- strike that. Let me be clear.

18 The blade, there are two blades in each male  
19 connector, correct? Actually, the blades are in the  
20 female housing. But in the wiring harness, in the area  
21 in question there are two blades, one is connected to a  
22 red wire, and one is connected to a blue wire, correct?

23 A. Yes.

24 Q. And there are also two other structures that  
25 mate with those blades, one is connected to a white

1 wire, and one is connected to a green wire, correct?

2 A. They're striped wires, but, yes, there's a  
3 white and a green.

4 Q. What do you call those structures into which  
5 the blades are inserted? Do you call them receivers?

6 A. I've been calling them receptacles or  
7 receptacle terminals.

8 Q. Receptacles or receivers; is that fair?

9 A. That's not how I referred to it in the  
10 report, but, yes, that's a fair description.

11 Q. How wide are the receptacles into which the  
12 blades are inserted?

13 A. Depends which dimension you're speaking of.

14 Q. I'm talking about laterally, side to side as  
15 the two are positioned.

16 A. Well, there's multiple widths. You have an  
17 internal width. You have an external width because  
18 they're essentially boxed structures.

19 Q. I'm trying to find out how wide is the metal  
20 part of the receiver that comes into contact with the  
21 metal blade so as to form an electrical connection.

22 A. Then you're talking about the contact pads,  
23 not the entire receiver or receptacle. Is that what  
24 you're asking?

25 Q. You tell me.

1 MR. LOWE: Objection.

2 A. I can't answer until you tell me which one  
3 you're interested in.

4 BY MR. SPENCER:

5 Q. Well, show me on your drawing what it is  
6 that the blade comes into contact with to form a  
7 connection.

8 A. There are two contact pads, or protrusions,  
9 on one side of the receptacle, and one on the opposite  
10 side.

11 Q. So one on the top -- two on the topside, one  
12 on the spring side?

13 A. If you want to call it the spring side,  
14 there's one on the spring side. Depends on what your  
15 orientation is and how you put these things together,  
16 what's top and bottom, but there's two on one side and  
17 one on the other. If you want to call that the spring  
18 side, we can use that reference.

19 Q. All right. Are the blades assembled in a  
20 clean room -- strike that. Are the connectors  
21 assembled in a clean room?

22 A. I don't know that. I don't know at what  
23 point they are assembled. They are available from KET  
24 as individual components.

25 Q. Are the -- is that portion of the assembly

1 line where the connectors are put together in this  
2 wiring harness, is that a clean room?

3 A. Are you talking about if KET puts them  
4 together?

5 Q. I'm talking about the assembly plant, the  
6 factory, the car factory.

7 MR. LOWE: Objection.

8 A. I haven't seen the factory. I don't know if  
9 it's a clean room or on the assembly line.

10 BY MR. SPENCER:

11 Q. Are the blades polished at any point?

12 A. They have a flashing -- a coating on the  
13 outside.

14 Q. Are they polished at any point during their  
15 manufacture?

16 A. From my examination, I don't think so, but I  
17 haven't seen the manufacturing process. Like I said,  
18 they are plated on the exterior, and usually you  
19 wouldn't polish a plated product.

20 Q. How are the blades formed?

21 A. They are a sheet metal, basically, that are  
22 stamped and then it is formed into the shapes.

23 Q. It's actually a piece of metal that's  
24 folded, correct?

25 A. Basically, yes.

1 Q. Yeah. So you get what I call a fold-over  
2 side, and then you get a seam side where the folds  
3 meet, correct?

4 A. Right. I have called that the split side  
5 versus the seam side.

6 Q. Seam side, split side; potato, potato,  
7 right?

8 A. Yes.

9 Q. So I'm going to just do one thing here.  
10 What I want to do is, I have put on a thumb drive here  
11 the photographs that you gave us, and then -- I'll  
12 explain that in a minute.

13 MR. SPENCER: What I want to do is mark the  
14 thumb drive itself as Carden Exhibit A because  
15 there are going to be numbers inside of it, but  
16 A I want to be the thumb drive itself so you  
17 have that.

18 MR. LOWE: This is what thumb drive?

19 MR. SPENCER: It's a thumb drive that I will  
20 describe in the next series of questions and  
21 comments. Okay?

22 MR. LOWE: It's one that you --

23 MR. SPENCER: That's correct.

24 MR. LOWE: -- created?

25 MR. SPENCER: What I want to do is work with

1 Mr. Carden to make sure we've got the same  
2 thing.

3 BY MR. SPENCER:

4 Q. So Carden Exhibit 1 to our deposition is  
5 your report, and we've already noted that. I want to  
6 mark Carden Exhibit 2 is the folder on the thumb drive  
7 that we've marked as A, and these are your DP  
8 photographs that you provided to us. And you provided  
9 us DP photographs from Number 380 to 386 (sic),  
10 correct?

11 So we're clear, what I did was, we all uploaded  
12 everything to Eddie Cooper's FTP site, and this is what  
13 I downloaded. I'm trying to document what you gave us  
14 before the deposition. That's what I'm trying to do.  
15 And I'm telling you that we believe that you uploaded  
16 to Mr. Cooper's Web site a series of DP pictures from  
17 380 to 386 (sic). I'm just telling you that. Here  
18 comes a question: What is DP in your parlance?

19 A. Digital photographs.

20 Q. Digital photographs. That's your name,  
21 correct?

22 A. I call it DP. That's what it stands for.

23 Q. And this is meant to designate those  
24 photographs that were taken using a digital camera with  
25 a regular and also perhaps a macro lens, correct?

1           A.    Yes, basically.  There's multiple cameras,  
2   so that's a compilation of multiple cameras, probably.

3           Q.    But what you provided to us before the  
4   deposition today were, at least for DP photographs,  
5   were Numbers 380 to 986.  I might have misspoken  
6   earlier.

7           A.    That's what you have on your thumb drive  
8   here.  I have to confirm that with what we uploaded.

9           Q.    That's what I'd like you to do, confirm it,  
10  please.

11          A.    Okay.  I'm looking at the photos in my photo  
12  notebook, and the photos of the inspection, starting  
13  from the receipt of the vehicle on January 9th, start  
14  at 380, and my last photo in this notebook is the  
15  vehicle being loaded on Mr. Clarke's transport, and is  
16  DP-986.

17          Q.    Okay.  So then what's on this thumb drive,  
18  Carden Exhibit 2, matches what's in your photograph  
19  notebook, correct?

20          A.    For the inspection dates, yes.  I had some  
21  photos from the previous inspection.

22          Q.    It's all the DP, the digital photographs,  
23  that you provided to us and uploaded to Mr. Cooper's  
24  site, all the DP series?

25          A.    Right, from the inspection -- from the



1 January inspection.

2 Q. So at least the number of photographs on  
3 Carden Exhibit 2 match the equivalent photographs in  
4 your photograph binder, fair?

5 A. Yes, they should. I have photos from the  
6 prior inspection that we didn't put on the site.

7 Q. Right. And that are not in your binder?

8 A. No, they are in the binder.

9 Q. My 380 is this right here.

10 A. Yes, it matches Number 380 in our notebook.

11 Q. So we're clear, then, the photographs that  
12 you uploaded to Mr. Cooper's site that were marked  
13 DP-0380 to DP-0986 are photographs that were digital  
14 photographs that were taken during the January 9  
15 through 11 work, correct?

16 A. Yes. The inspection was on the 10th, or  
17 started on the 10th, but he brought the vehicle to us  
18 the day before, the afternoon before.

19 Q. So in your binder you're telling us you have  
20 an additional series of DP photographs that was not  
21 uploaded to the Cooper Web site; is that right?

22 A. Right. This is photographs from the prior  
23 inspection, and my understanding was we were going to  
24 provide the photos and data from the inspection at our  
25 laboratory.

1 Q. All right. We will talk about those in a  
2 little bit. So we've confirmed Carden Exhibit 2 is a  
3 complete set of the DP series of photographs that were  
4 taken during the inspections that were on January 10  
5 and 11, inclusive of the delivery of the vehicle on  
6 January 9, correct?

7 A. Yes.

8 Q. So that's Exhibit 2. Carden Exhibit 3 is a  
9 series of KMDP photographs, 001 to 00 -- excuse me.  
10 Strike that.

11 Carden Exhibit 3 is a series of KMDP  
12 photographs, and they're numbered 001 through 186  
13 (sic). What does KMDP mean in your parlance?

14 A. That stands for Keyence microscope digital  
15 photograph.

16 Q. I'll represent to you that that is what we  
17 found uploaded by you on the Web site as far as KMDP  
18 photographs were concerned, and I want to confirm with  
19 you that Exhibit 3 is, in fact, what you uploaded in  
20 that regard.

21 A. Could you repeat the last full number again  
22 because I wrote down 186?

23 Q. I've got 168.

24 MR. LOWE: You said 186 when you originally  
25 identified it.

1 MR. SPENCER: I'm not surprised.

2 MR. LOWE: 168 is the number?

3 MR. SPENCER: Yeah.

4 A. What was your question?

5 BY MR. SPENCER:

6 Q. In your photo book, what do you have in the  
7 way of KMDP photos?

8 A. I have KMDP-001 through KMDP-168.

9 Q. So Carden -- we agree, then, that the  
10 digital images or Carden Exhibit 3 match the  
11 photographs in your photograph binder?

12 A. Yes.

13 Q. Okay. Great. Thank you. In fairness,  
14 we're not going through each individual image and  
15 comparing them one by one. We're just counting to make  
16 sure --

17 MR. LOWE: Not to interrupt except to try to  
18 confirm, are all of the photographs in that  
19 binder on the thumb drive you gave to  
20 Mr. Spencer?

21 THE WITNESS: I haven't given it to him, but  
22 yes, they are.

23 MR. SPENCER: We're going to get to that.

24 MR. LOWE: I'm trying to keep track to make  
25 sure you get everything that's here physically.

1 MR. SPENCER: Stick with me, James. I'll  
2 get you there, buddy.

3 BY MR. SPENCER:

4 Q. So Carden Exhibit 4, this is a series of  
5 MDPB photographs. What are those in your parlance?

6 A. That's microscope digital photograph, and B  
7 indicates the specific stereomicroscope. We have an A  
8 and a B.

9 Q. Carden Exhibit 4, which is part of the thumb  
10 drive we marked A, that has MDPB photographs 1 through  
11 160. Is that what you have in your photo binder?

12 A. Yes, that's what I have in my binder here.

13 Q. All right. Then we have Carden Exhibit 5,  
14 which is on our thumb drive A, has -- this is called  
15 RT-E01 to E05. Would you explain the significance of  
16 those in your parlance?

17 A. That is a radiographic image.

18 Q. In other words, that's an X-ray?

19 A. Yes, but we use multiple types of X-ray  
20 machines, so we call it a radiograph. So it is an  
21 image. And that is our images that were taken of  
22 Mr. Cooper's exemplar during the inspection.

23 Q. I've got RT-E01 to E05, with the addition of  
24 one called RT-E04 enhanced. Does that match your  
25 binder?

1           A.    It does.  It is in my deposition notebook  
2   rather than the images with the other digital photos.

3           Q.    We'll get to that.  But what we have here as  
4   Exhibit 5 are the radiographs that you uploaded to  
5   Mr. Cooper's site?

6           A.    Yes.  And those were taken during that  
7   inspection, so the date of that was generated during  
8   that inspection, and his exemplar that he took with  
9   him.

10          Q.    Then we have a folder called Carden Exhibit  
11   6.  Carden Exhibit 6 is SEM A-001 to 160.  Can you  
12   explain what those mean in your parlance?

13          A.    SEM stands for scanning electron microscope,  
14   and A, again, we have more than one scanning electron  
15   microscope, so that is one specific microscope.

16          Q.    Can you check your binder and make sure that  
17   what is on Carden Exhibit 6 matches your binder when it  
18   comes to SEM photographs that were taken of  
19   Mr. Cooper's exemplar and the subject?

20          A.    Well, again, you're giving me numbers, and I  
21   don't know what the images that you have, but my  
22   numbered scanning electron microscope images SEM A-001  
23   through SEM A-160 are in this notebook.

24          Q.    Then we have a folder called stereo pairs,  
25   and they're marked SEM\_A-005, 006, 008, 009, 015, 016,

1 030, 031, 120, and 121. Do those match the stereo  
2 pairs that are in your book?

3 MR. LOWE: Are those part of Exhibit 6?

4 MR. SPENCER: Yes.

5 A. I don't think I have those printed in the  
6 book. What those are, are individual images that are a  
7 subset of the images that we talked about before, and  
8 they are dual images, images that fit together to  
9 create what's called a stereo pair.

10 BY MR. SPENCER:

11 Q. And you uploaded them to Mr. Cooper's Web  
12 site just like this?

13 A. I did. I wanted whoever looked at them to  
14 know that these are the same photos in the other  
15 folder, but they are the pairs.

16 Q. I got it.

17 A. So it's a second copy of what's in the other  
18 photo that are used for stereo pairs.

19 Q. Okay. Thank you. Now, Carden Exhibit 7,  
20 which is on this thumb drive, is the NFPA methodology  
21 document that we looked at earlier. Okay? Have we  
22 established then that Carden Deposition Exhibits 2  
23 through 6 are everything that you uploaded to  
24 Mr. Cooper's FTP site before your deposition?

25 A. I would have to go back and -- I don't know

1 if I have a record of what was produced. I think I can  
2 go back to my computer at work and confirm all of that,  
3 but that sounds accurate.

4 Q. Sure. It sounds accurate. You might want  
5 to look at an individual image or what have you.

6 A. Well, if I remember correctly, we also  
7 provided the X-ray data, the FTIR data, and locators  
8 for these individual photographs. So there is more  
9 data that we provided, I believe, than is represented  
10 in what you just showed me. These are the photograph  
11 images, but there's additional data.

12 Q. I think you're right, and I'm glad you  
13 mentioned that.

14 A. So we provided everything that was generated  
15 during that inspection.

16 Q. You also, in addition, you provided to us a  
17 folder called Laboratory Data, correct?

18 A. It would seem to be correct. I didn't  
19 upload -- I had my IT person upload this stuff.

20 Q. There's an FTIR report, which is chemical  
21 analysis using FTIR, correct?

22 A. Yes.

23 Q. And X-ray layouts, correct?

24 A. Yes.

25 Q. That's typical -- that's what you told your

1     guy to provide us, right?

2             A.     Yes.     Well, this is data from the  
3     inspection, so this is data that was generated during  
4     the inspection.     And there should be, I think, locators  
5     for the SEM images to --

6             Q.     Hold on.     One thing at a time.     I'm going to  
7     put the laboratory data onto our thumb drive and that  
8     is going to be Carden Exhibit 7 -- excuse me.     Carden  
9     Exhibit 8.

10            MR. LOWE:   The FTIR report and X-ray  
11            layouts?

12            MR. SPENCER:   It's a folder called  
13            laboratory data with those two things in it.

14     BY MR. SPENCER:

15            Q.     Then you have photo documentation locators,  
16     which would be four files showing where the microscopic  
17     images were taken on the different structures.     And I'm  
18     talking about the MDP series, the KMDP series, the RT  
19     series, and the SEM series, right?

20            A.     Yes, and we normally -- we don't always  
21     provide those, but we were trying to give everybody all  
22     of the information from the data.     The same with the  
23     FTIR data, most of the time we just give raw data.     In  
24     this case we gave them the layouts and all of the  
25     information that we generated during the inspection.



1           Q.    So that folder containing the photo  
2   documentation locators is now Carden Exhibit 9 on our  
3   thumb drive A.  Then you had video documentation, and  
4   there were three videos marked DV-02, 03 and 03\_2,  
5   correct?

6           A.    What were those numbers again?

7                   MR. LOWE:  02, 03 and 03\_2.  Are the videos  
8   Exhibit 10?

9                   MR. SPENCER:  9.

10                  MR. LOWE:  I thought the locators --

11                  MR. SPENCER:  I'm sorry.  You're right.

12                  It's going to be 10.  Thank you.

13   BY MR. SPENCER:

14           Q.    Are those the three videos you had uploaded  
15   to the site?

16           A.    Yes, those would be videos from the  
17   inspection.

18           Q.    That's going to be Carden Exhibit 10.  All  
19   right.

20                   MR. SPENCER:  What do you think we should  
21   do, look at the drive or -- I guess we should  
22   look at the drive.  And maybe the thing to do is  
23   to, once this is copied, maybe I'll put that  
24   drive on here so we can all look at it together.  
25   Is that good with you?

1                   MR. LOWE: Don't matter to me. You can do  
2                   whatever you want. It's your depo. Subject to  
3                   my objections, which are well-taken.

4                   MR. SPENCER: Nah.

5                   BY MR. SPENCER:

6                   Q. Let me ask you a few questions while we're  
7                   waiting for this thing to copy. Do you have any other  
8                   investigations underway in connection with this case?

9                   A. I mean, no. This information that I have  
10                  with me is the case file and the investigations that  
11                  have been done.

12                  Q. I know it is so far. What I'm asking is,  
13                  are there other investigations underway that are being  
14                  performed by you, your staff, Clarke, or anybody else  
15                  in connection with this matter?

16                  A. Not that I know of. Well, I would say no.  
17                  We had preparation time to get ready for this  
18                  deposition. I looked at the drawings from KET  
19                  yesterday, as I spoke about. But as far as any  
20                  specific testing or analysis, we've completed what  
21                  we've done so far. We would probably review this  
22                  information and generate trial boards before it goes to  
23                  trial, and maybe generate some additional images that  
24                  might be presented from the data that we've collected  
25                  so far.

1           Q.    I know you've completed what you've done so  
2 far. That's not really what I'm asking. I'm trying to  
3 find out, to be perfectly frank with you, if I'm going  
4 to be faced with other measurements of other exemplars  
5 or other documents that I haven't seen before. So what  
6 I'm trying to find out from you is, are there any other  
7 investigations, experiments, measurements, activities,  
8 or things of that nature underway?

9           A.    The answer is no, not currently. As I said,  
10 if we needed to take, for instance, the CT data and  
11 generate images, or an animation from that, we may do  
12 that, but I don't have any current plans to do that.

13           MR. LOWE: I would just interject or add  
14 that obviously we haven't seen your experts'  
15 reports, and we haven't had their depositions  
16 yet. I would expect both Richard Clarke and  
17 Bill Carden to be prepared at the time of trial  
18 to respond to them, which may cause them to do  
19 additional work. Otherwise, I have not asked  
20 them to do any additional work.

21 BY MR. SPENCER:

22           Q.    Are there any investigations that have been  
23 performed that are not documented on the thumb drive  
24 that you brought with you today?

25           A.    No. This is our case file. It has the data

1 that we have generated, and collected, and reviewed to  
2 date.

3 Q. Are there any measurements, investigations,  
4 any activities of any kind that have been performed by  
5 you or your team that are not documented on that thumb  
6 drive that we're about to mark as thumb drive B?

7 A. As I sit here, I don't think so. I think  
8 this is complete.

9 Q. I should add, in fairness, with the addition  
10 of what we're going to mark as thumb drive C, which is  
11 the CT work?

12 A. That's right. Well, yes. And there is some  
13 of this information that wouldn't necessarily fit on  
14 this drive, but it is here with me, but that is the  
15 data.

16 MR. LOWE: Can I take a two-minute break?

17 MR. SPENCER: Yeah.

18 (A short recess was taken.)

19 MR. SPENCER: I'm giving the court reporter  
20 the thumb drive we've marked as Exhibit A, and  
21 that contains Carden Exhibits 2 through 10.

22 BY MR. SPENCER:

23 Q. You have another thumb drive that you were  
24 kind enough to bring with you. Let's look at that.

25 MR. LOWE: This will be Exhibit B?

1 MR. SPENCER: Yeah, thumb drive B. Exhibit  
2 B, yeah.

3 MR. LOWE: Did you bring a copy of your  
4 Exhibit A with you for me?

5 MR. SPENCER: No, I just made it.

6 MR. LOWE: You just made it just now?

7 MR. SPENCER: Yeah. If you want to take it  
8 and copy it onto your computer, I have no  
9 problem with that.

10 MR. LOWE: I'll get a copy from Cindy.

11 BY MR. SPENCER:

12 Q. So I'm going to look at thumb drive B. This  
13 has four folders, one of which is called Deposition  
14 Notebook, one called Documents Received, one Photo  
15 Documentation, and one Video Documentation; is that  
16 correct?

17 A. Yes.

18 Q. I'm going to rename the deposition notebook  
19 folder Carden Exhibit 11 Deposition Notebook. Okay?

20 A. You're renaming the file that's on my thumb  
21 drive?

22 Q. On the thumb drive B that you were going to  
23 give to me, right?

24 MR. LOWE: So there's an Exhibit 1 and  
25 Exhibit 11 that are the same?

1 MR. SPENCER: No. Exhibit 1 is the hard  
2 copy of his report.

3 MR. LOWE: Got it. Okay.

4 MR. SPENCER: That's Exhibit 1.

5 MR. LOWE: That includes his CV, and his  
6 testimony log, and all of that?

7 MR. SPENCER: Yes, sir. The thumb drive  
8 that has been marked as Exhibit A contains  
9 Carden Deposition Exhibits 2 through 10. Now,  
10 Mr. Carden has been kind enough to give us  
11 another thumb drive, which we've marked as thumb  
12 drive B. Carden Exhibit 11 is the folder on  
13 that thumb drive that contains his deposition  
14 notebook, and within that folder are other  
15 folders, and they are numbered: 1-1 Chronology;  
16 1-2 Curriculum Vitae; 1-3 Testimony Chronology;  
17 and so on down to 7.1, which is Conclusions.

18 BY MR. SPENCER:

19 Q. Am I correct that the only material -- well,  
20 where are your photographs on this drive?

21 A. If you go back up one folder, it's the photo  
22 documentation folder.

23 Q. Got it. So within Carden Deposition Exhibit  
24 11, Deposition Notebook, am I correct that the only  
25 part of that that was actually physically provided to

1 us before your deposition is the report, which is  
2 marked 1-7?

3 A. No, that's not true.

4 Q. What is untrue about that?

5 A. You have the report. As part of my report  
6 there is my CV, my testimony chronology. I provided  
7 you now with an updated version. You also have the  
8 police report, which is in there. There is  
9 experimental procedure, which contains protocols.  
10 You're asking me what I provided to you other than  
11 that.

12 Q. Okay.

13 A. Then there's experimental results, and you  
14 have the experimental results that were obtained during  
15 the inspection.

16 Q. What is on Exhibit 11 that was not provided  
17 to us before today?

18 A. There is the case chronology. Deposition  
19 notice, which you should have that. Our evidence  
20 transfer records that shows the evidence and exemplars  
21 that were associated with the case. We have an  
22 inspection attendees list, which we provided you with  
23 copies before, during the inspection. There's a case  
24 literature list, which is a listing of the documents  
25 that we had in the case.

1 Similarly, there's a documents received and a  
2 documents sent folder. There's a literature review  
3 folder, which has the owner's manual, the drawings, and  
4 information from the KET Web site. You have -- in the  
5 experimental results section there's some additional  
6 information, including my notes. It has the  
7 dimensional analysis information from the subject  
8 components. We have a folder called CAD, which has a  
9 document called Connector Position Analysis, so that is  
10 the image that we discussed before that was generated  
11 from the CT scan, so it's a series of images.

12 You have a folder called Exemplar Analysis, and  
13 that contains our exemplar analysis information. And  
14 the last folder coincides with our conclusions tab, so  
15 those are the conclusions that were listed in my  
16 report, and supporting information for each of those  
17 conclusions that we would use to answer questions  
18 during the deposition.

19 Q. My question was, what's in that folder that  
20 was not provided to us before today?

21 A. That's what's in the deposition notebook  
22 folder that was not provided before today. And some of  
23 that was compiled as preparation for this deposition.

24 Q. Thank you. Then you have a folder on thumb  
25 drive B called Documents Received, which we will mark



1 as Carden Exhibit 12. To what extent is that  
2 duplicative of your notebook?

3 A. That is documents that we received for this  
4 case, and it is a copy of what is in my documents  
5 received notebook.

6 Q. Okay. Got it.

7 A. As I said, there may be one or two of these  
8 things that are on flash drives because they were too  
9 voluminous to copy, but I have additional flash drives  
10 in the documents received notebook. But I believe  
11 everything is in here, looks like there's videos and  
12 photographs included.

13 Q. Carden Exhibit 12 is a folder called photo  
14 documentation -- did I say 12? I meant 13.

15 MR. LOWE: 13.

16 MR. SPENCER: Thank you.

17 BY MR. SPENCER:

18 Q. Carden Exhibit 13 is a folder called Photo  
19 Documentation, and that's also on thumb drive B.  
20 Explain -- I've opened that folder up and there are  
21 different folders under there. Can you tell us what  
22 those are, please?

23 A. Those are segregated by the types of images  
24 that are provided. As we discussed, there's DPs, which  
25 stands for digital photos. DP-E stands for photos of

1 exemplars. And that notation follows for the other  
2 instruments as well, such as the KMDPs, MDPs, and SEMs.

3 Q. Which of those folders under Exhibit 13,  
4 photo documentation, were not provided to us before  
5 today?

6 A. The ones that are Es, or have Es at the end.

7 Q. How about the 3Ds?

8 A. The 3Ds should have been provided. That is  
9 3D Keyence microscope images that were taken at the  
10 inspection. I will say that during the inspection we  
11 documented Mr. Cooper's exemplar. Those photographs  
12 are in the DP folder because it was conducted as part  
13 of the inspection.

14 Q. So when we see DP-Es, and KMDP-Es, and  
15 MDP-Es, and SEM-Es, those are all your work with  
16 Mr. Clarke's exemplar?

17 A. Yes. Generally, as we do inspections, we're  
18 looking at the subject components exclusively and we  
19 usually don't have exemplars available during the  
20 inspection. This is an unusual case in which we had an  
21 exemplar presented by Mr. Cooper, so we documented it  
22 along with the subject components. So it is included  
23 in the DP numbers, and those were all provided.

24 Q. Thank you. The next folder is Carden  
25 Exhibit 14, and that's video documentation, and within

1     there are two folders, one says DVs, which appears to  
2     contain the three videos we referred to earlier, plus  
3     one called DV-01. You believe those were provided to  
4     us earlier, correct?

5             A. Well, I believe DV-01 was from the  
6     inspection back in October, so that was not a part of  
7     the inspection data package from our inspection.

8             Q. I gotcha. The subfolder in Carden  
9     Deposition Exhibit 14, which it says DVs, the video  
10    within there called DV-01 was not provided to us before  
11    today, correct?

12            A. Right, that was taken from the October  
13    inspection, and everybody had their own video for that  
14    inspection.

15            Q. And subfolder in Carden Exhibit 14 marked  
16    DVEs, that's all new video that is of Mr. Clarke's  
17    exemplar, I would assume; is that right?

18            A. Yes.

19            Q. We've marked everything now on thumb drive  
20    B, and so we'll turn to something new. What should we  
21    look at next, Mr. Carden? What makes sense? It's your  
22    stuff. I'm just trying to make life easy. Want to  
23    look at the CT material?

24            A. Well, I think we can go through the data.  
25    Whichever you want to go through first.

1 Q. What data are you talking about?

2 A. The inspection data and/or the dimensional  
3 data, the CAD data.

4 Q. Let me just ask you real quick, is the CAD  
5 data on the thumb drive? This here?

6 A. This as it is is on the thumb drive. The CT  
7 data is on a separate thumb drive.

8 Q. So the written record is clear, there's a  
9 folder in your deposition binder called CAD, and it  
10 contains a series of images that were created using CT  
11 data with the blade at different positions of  
12 insertion?

13 A. That's correct. That was taken from the CT  
14 data and put in a CAD software to generate this image.

15 Q. So did you actually physically take separate  
16 CAD images as you were moving the connector, or did you  
17 simply alter the images to simulate movement?

18 MR. LOWE: Objection.

19 A. The CAD data was moved and snapshots of  
20 those positions was taken to generate these.

21 BY MR. SPENCER:

22 Q. So these images that we see under the CAD  
23 folder, they are taken from one CT scan?

24 A. Basically, yes, but you have to take that CT  
25 scan and identify which components are movable

1 components.

2 Q. I'm just going to do this one step at a  
3 time. You did one CT scan of the connectors in the  
4 fully closed position, correct?

5 A. I believe we did a CT scan -- let me look at  
6 our CT data -- of the connection as it was, and we also  
7 did individual scans of the housing components after  
8 they were disassembled.

9 Q. So to generate the demonstratives that were  
10 created using the CT data, you took data from a single  
11 CT scan when the connection was fully mated, and then  
12 created other images by moving components apart. In  
13 other words, you simulated the separation by moving CT  
14 images relative to one another; is that a fair  
15 statement?

16 A. That's a simplistic description. We did do  
17 two CT scans. We did a CT scan of the connector fully  
18 connected, and then we did individual scans of the male  
19 and female plastic housings as well.

20 Q. I'm a simplistic guy. What you did was, you  
21 did a CT scan and got image data from a scan of the  
22 connectors fully mated, and then you manipulated those  
23 images to simulate the two connectors being moved  
24 farther apart?

25 A. Basically, yes. It's a little more

1 complicated than that, but that's basically true.

2 Q. Well, probably a lot more expensive than  
3 that.

4 MR. LOWE: I don't get charged for this.  
5 You're asking the questions.

6 BY MR. SPENCER:

7 Q. So where are the CT data that you used to  
8 make those?

9 A. The CT data is on this flash drive that I  
10 have in my deposition notebook.

11 Q. Is that a flash drive that we can have?

12 A. You can -- I would presume that this is the  
13 only copy in the case file. There may be another that  
14 resides on the CT computer, but I think you can make a  
15 copy of this.

16 MR. LOWE: Make a copy of it.

17 MR. SPENCER: How big is it?

18 A. I don't know. They can be anywhere from ten  
19 gigabytes to 30 or 50 gigabytes. Looks like this  
20 contains about seven to eight gigabytes, and that  
21 includes a viewer so that you can open and view the CT  
22 data in three dimensions.

23 (A discussion was held off the record.)

24 BY MR. SPENCER:

25 Q. So you would rather we not mark that

1 particular thumb drive?

2 A. I would prefer that. Or you can mark it and  
3 I can take it and make you a copy.

4 Q. I don't want to wait that long. How many  
5 other thumb drives do you have?

6 A. I have this one, which is a copy of the one  
7 you marked.

8 Q. I don't care about that. Is this the only  
9 new one?

10 A. Like I said, there's some in my documents  
11 received notebook that has like photos from the other  
12 experts, but I think that's all been included on here.

13 Q. So this is the only other thumb drive?

14 A. I believe that is the only other thumb drive  
15 that has data that you don't have in another place.  
16 There's another drive here. Let me see what this one  
17 is. The owner's manual.

18 Q. I don't care about that.

19 A. I may be able to take this and add it to  
20 that if there's enough space.

21 Q. Let's see. This has eight gigs of free  
22 space. How much do you have here?

23 A. 7.5. It's going to be close.

24 Q. Let's try.

25 (A discussion was held off the record.)

1 BY MR. SPENCER:

2 Q. The RT images, the radiograph images, are  
3 those -- the ones you provided to us earlier are of the  
4 Cooper's connector, right?

5 A. Yes.

6 Q. But you also did some radiograph images of  
7 the Clarke connector; is that right?

8 A. Yes, and those are both done on the CT  
9 machine. You can either capture a single still image,  
10 or you can do a full CT scan.

11 Q. We haven't talked about the shift assembly  
12 pawl at all, and that's because we think she left it in  
13 drive, right?

14 A. I believe that is true, yes.

15 Q. You don't anticipate talking about the shift  
16 assembly pawl at trial, do you?

17 A. Well, I described it in my report. If I'm  
18 asked questions about it, but I don't think --

19 MR. SPENCER: You're not going to get into  
20 that, are you, James?

21 MR. LOWE: I haven't prepared for trial yet,  
22 but I think the issues you've been talking about  
23 are probably the most important. But you're  
24 invited to talk to him about anything in his  
25 report, or anything he's produced here today.



1 MR. SPENCER: If it's not an issue, it's not  
2 an issue.

3 MR. LOWE: Off the record for a second.

4 (A discussion was held off the record.)

5 BY MR. SPENCER:

6 Q. I'm looking in your folder called -- in your  
7 deposition binder under X-ray A Layouts, and there are  
8 these -- on the page that says, exemplar connector  
9 blade blue, X-ray\_A-05 SEM\_A-080, the bottom right  
10 there's an element line with a weight. Tell me about  
11 that.

12 A. That is -- this is what I was  
13 distinguishing, radiographs versus X-ray. That is a  
14 spectral analysis using X-rays to quantify the elements  
15 present in the view of the scanning electron  
16 microscope.

17 Q. So, basically, what that's telling us is  
18 that there's a certain amount of -- what is CK?  
19 Element line CK, what's that?

20 A. Well, the first letter is the element. The  
21 second letter is the line that they're quantifying it  
22 on. So it's C, that's carbon.

23 Q. So it's 2.79 percent carbon?

24 A. Yes.

25 Q. Then you have oxygen, right, O?

1 A. Yes.

2 Q. Aluminum, AL?

3 A. Yes.

4 Q. I'm not going to play with the others.

5 MR. SPENCER: So we've managed to copy over  
6 to thumb drive B the CT data that was on that  
7 other thumb drive to which we have been  
8 referring, and I'm marking those two new folders  
9 as Carden Exhibit 15, which is the CT data, and  
10 Carden Exhibit 16, which is the folder marked  
11 myVGL3.1-3D Viewer Software.

12 MR. LOWE: Can you repeat those numbers,  
13 please?

14 MR. SPENCER: MyVGL3.1-3D Viewer Software.

15 A. I will mention, that really doesn't have  
16 anything to do with the case. That is the viewer that  
17 goes along with the CT data so that you can open it and  
18 view it as it should be in three dimensions.

19 MR. SPENCER: I knew that, but James didn't.

20 MR. LOWE: Thank you. Your description,  
21 again, please, Chris, for Exhibit 15?

22 MR. SPENCER: CT Data.

23 MR. LOWE: But that's not all the CT data.

24 A. That's the CTE data.

25 BY MR. SPENCER:

1 Q. Is there other CT data that I haven't  
2 copied?

3 A. That's the exemplar data. The CT data from  
4 the inspection was already provided.

5 Q. Charlie says it wasn't.

6 A. It should have been provided.

7 Q. I know it should have been.

8 A. Well, I don't think -- I don't know if we  
9 were able to upload it to the FTP site, but that should  
10 have been provided as part of the data package.

11 Q. Do you have the other CT data here with you?

12 A. Yeah.

13 MR. LOWE: That's way too big to copy, I  
14 think.

15 A. I can look and see. Oh, I'm sorry. That  
16 has been provided. We did not do a full CT scan.  
17 That's what I was saying about the radiographs were  
18 from the CT machine, but we only took individual  
19 radiographs rather than doing a full CT scan, which  
20 takes a couple of hours. So, yes, you do have that  
21 information and data.

22 BY MR. SPENCER:

23 Q. Where is it?

24 A. That's the RT numbers that we were talking  
25 about. We didn't do a full CT scan, that's why I was

1 making that distinction.

2 Q. Let me clarify this because Charlie is  
3 concerned about it. You're saying that the only data  
4 you have from the radiographs that were done on the  
5 10th and 11th are the images themselves that are in the  
6 RT folder we identified earlier?

7 A. Yes. That's the only thing that was  
8 collected. We took radiographs, and everybody agreed  
9 that's what they wanted and showed what they needed.  
10 We did not do a full CT scan on Mr. Cooper's exemplar.

11 Q. So the only CT data that you have in  
12 connection with this matter is the data that were used  
13 to create the images that we talked about earlier where  
14 you simulated a parting of the connector?

15 MR. LOWE: I think that's Exhibit 5.

16 BY MR. SPENCER:

17 Q. And that would be shown in Enclosure 10, for  
18 example, in your report.

19 A. Well, yes, that was generated from the CT  
20 data. That is not the full CT data. It was generated  
21 from the CT data.

22 Q. So there's only one set of CT data, and that  
23 was used to do a CT scan of the exemplar connectors put  
24 together, and then the plastic housing separately, all  
25 of which were used to create the demonstrations that we

1 talked about of the connectors being moved apart?

2 A. Yes.

3 Q. Fair enough. Thanks.

4 MR. SPENCER: Let's go off the record and  
5 let me take a quick break.

6 (A short recess was taken.)

7 BY MR. SPENCER:

8 Q. You refer on Page 7 of your report, Exhibit  
9 1, the last paragraph, to scratches and a gouge that  
10 were observed on the surface in front of the lock  
11 feature. To what do you attribute those?

12 A. I haven't identified an instrument or  
13 anything that would have created those marks. They  
14 could have been done during manufacturing, or handling,  
15 or at any time.

16 Q. You don't know -- you know that the  
17 scratches and gouge were present, but you don't have an  
18 opinion as to how they were made?

19 A. No, I haven't formulated an opinion  
20 necessarily how they were made.

21 Q. Have you formulated an opinion that rules  
22 out any possibilities concerning how they were made?

23 A. Not necessarily. I was documenting that  
24 they were there.

25 Q. I don't know what not necessarily means.

1 You should know by now I like my shirt buttoned all the  
2 way to the top, so I want to button up this point.  
3 Have you formulated an opinion that rules out the  
4 possibility, for example, that a guy putting in an  
5 aftermarket radio gouged those things?

6 A. That would not be likely. I don't think  
7 that would come from putting in the aftermarket radio.

8 Q. Based on what?

9 A. Based on their location, and the orientation  
10 of that connector with respect to the steering column.

11 Q. What does that mean?

12 A. Number one, the marks are prior to the barb,  
13 or the locking feature on that arm of the connector,  
14 which means they have to go under the bridge of the  
15 female connector. Number two, the orientation of the  
16 connector on the steering column, that face of the  
17 connector is against the steering column. So it is not  
18 likely that even if you were trying, that you would be  
19 able to get a tool, or an instrument, or anything else  
20 in there to make a mark. And it is just as easy to  
21 remove it if it is locked by pressing the tab and  
22 releasing the connector.

23 Q. You talk in the next sentence about the  
24 molding seam adjacent to these features was still  
25 raised above the surface of the housing. Why was that

1     worth mentioning?

2             A.     That if there was some contact with a larger  
3     object than the size of the scrape mark itself, then it  
4     would have altered or scraped away that molding seam.

5             Q.     What you're saying is, if somebody were  
6     messaging around with a tool in there, you think they  
7     would have come into contact with the molding seam as  
8     well?

9             A.     It could have, or if it was scraped against  
10    a larger object that you would have damaged that  
11    molding seam, or flattened out that molding seam.

12            MR. SPENCER:   That's all the questions I  
13    have at this time, but I don't want to end the  
14    deposition because I haven't had an opportunity  
15    to look at the material that was provided for  
16    the first time today, so I want to adjourn the  
17    deposition, but not conclude it.

18            MR. LOWE:   That's fine.   I have a question,  
19    maybe two for Mr. Carden.

20            MR. SPENCER:   Okay.

21                           CROSS-EXAMINATION

22    BY MR. LOWE:

23            Q.     Mr. Spencer didn't really ask you about the  
24    opinions you formulated in your work in this case, but  
25    I wanted to ask you whether or not you have formulated

1 an opinion to a reasonable scientific and engineering  
2 certainty as to whether or not the ignition cylinder  
3 solenoid connector in the Whitaker 2007 Hyundai Santa  
4 Fe had been properly and fully connected and seated at  
5 the time of manufacture or assembly. Do you have an  
6 opinion?

7 A. I do.

8 Q. What is your opinion?

9 A. My opinion is it was never fully seated at  
10 the time of manufacture.

11 Q. Do you have an opinion as to whether or not  
12 that connector had become disconnected at some time  
13 between the date of manufacture, from the position it  
14 had been in at the time of manufacture, and completely  
15 separated sometime prior to the event of October 2015  
16 in which Ms. Whitaker received her fatal injuries?

17 A. Yes. Based on the analysis that we have  
18 done, it had at one time been connected, not  
19 completely, but then it had separated sometime prior to  
20 the accident.

21 Q. And would you generally describe the basis  
22 for the opinions that you've just expressed?

23 A. The examination of the subject and exemplar  
24 connectors, there is -- on the subject connector there  
25 are contact marks on the blade from being in contact



1 with the receptacles, but those contact marks are less  
2 than the contact marks that you would see on an  
3 exemplar in a fully engaged position, which leads me to  
4 say or conclude that the connector was never fully  
5 inserted from the time it was manufactured.

6 Q. Is all of the CT data, the scans from the  
7 scanning electron microscope, and all of the  
8 photographic documentation, is all the markings that  
9 you've identified on the subject vehicle connector and  
10 on the exemplar connectors as easily visible to any  
11 other scientist or engineer who cares to look at them?

12 MR. SPENCER: Objection, calls for  
13 speculation.

14 A. Yes. I have provided the images that I have  
15 obtained and drawn my conclusions from, and anyone else  
16 can view them, and examine them, and confirm or deny or  
17 draw their own conclusions from them.

18 BY MR. LOWE:

19 Q. And all of the defense experts in this case  
20 were present on January 10th and 11th as you conducted  
21 these laboratory analyses?

22 A. Yes.

23 Q. Have you provided all of your photographic  
24 and video documentation of your analysis to date?

25 A. Yes.

1           Q.    What is the effect, in your opinion, to a  
2   reasonable scientific and engineering certainty of the  
3   failure of the ignition cylinder solenoid connector to  
4   have been fully and properly seated at the time of  
5   manufacture?

6           MR. SPENCER:   Object to the question.   I  
7   don't understand.   But go ahead and answer.

8           A.    If it is not fully seated, then it is not  
9   locked together.   There is a locking feature on the  
10   connector that keeps it from being pulled apart or  
11   falling apart if it is fully engaged.   You can have a  
12   partial engagement in which the connector will still  
13   make connection for some period of time, but that lock  
14   is not engaged.   And in that condition, then the  
15   connector can separate very easily.

16   BY MR. LOWE:

17           Q.    What is the effect of the connector  
18   separating?

19           MR. SPENCER:   Same objection.

20           A.    Then the electrical connection is not  
21   complete any longer and you can remove the key from the  
22   ignition in positions other than the park position, or  
23   shifter -- gearshift positions other than the park  
24   position.

25   BY MR. LOWE:

1 Q. Does that mean that with the components of  
2 the ignition cylinder solenoid connector separated, one  
3 could remove the ignition cylinder -- remove the  
4 ignition key from the ignition cylinder in a gearshift  
5 selector such as drive?

6 A. Yes.

7 MR. LOWE: Thank you.

8 REDIRECT EXAMINATION

9 BY MR. SPENCER:

10 Q. Let me just be clear: You have something  
11 called M1390 EX-04 connector. It's in a little  
12 glassine Lucite box. What's this?

13 A. That is the exemplar connector that is from  
14 the steering column provided by Mr. Clarke.

15 Q. When you got that connector, did you -- was  
16 it connected?

17 A. Yes.

18 Q. Who connected it?

19 A. It was connected, I presume, during  
20 manufacture.

21 Q. Do you know whether Mr. Clarke had  
22 disconnected it and reconnected it?

23 A. I don't remember specifically asking him,  
24 but my understanding is that he had not manipulated it.

25 Q. Where did you get that understanding?

1           A.    We probably discussed it. We discussed  
2   obtaining exemplar connectors, and he mentioned that  
3   the steering column likely has a connector on it if it  
4   was removed from the vehicle and they clipped the wires  
5   beyond the connector, which they had done. So the  
6   connector was still in the place, or the condition that  
7   it was when it was removed from the vehicle. The wires  
8   behind it were just clipped.

9           Q.    I see that the receivers -- oh, you've  
10  actually pulled them out, haven't you? Did you ever  
11  pull the receivers out of the subject connector?

12          A.    Yes, we did that during the inspection.  
13  That was the reason Mr. Cooper brought his exemplar for  
14  us to radiograph, so we could see how to disassemble  
15  the subject connector. And we disassembled and removed  
16  the wire terminals from the plastic housings on the  
17  subject one.

18          Q.    Both sides?

19          A.    Yes. No, on -- we removed both sides on the  
20  exemplar. On the subject one, I believe the receptacle  
21  sides are still inside the plastic housing.

22          Q.    That's what I thought.

23               MR. SPENCER: My people are going to want to  
24  look at the Clarke exemplar. What's the best  
25  way to deal with that?

1 MR. LOWE: Far as I'm concerned, you could  
2 take it.

3 MR. SPENCER: I don't want to do that  
4 because of my schedule. I don't want anything  
5 to happen to it. Can you ship it directly to  
6 either Eddie Cooper or Charlie Rau?

7 THE WITNESS: Yes. And I would ask that  
8 they be careful not to add any more damage to  
9 the blades in their investigation.

10 MR. SPENCER: Understood.

11 MR. LOWE: But we photo-documented it --

12 THE WITNESS: That's right. We've got  
13 documentation.

14 MR. LOWE: -- so if they change it, we'll  
15 know.

16 MR. SPENCER: Let's go off the record.

17 MR. LOWE: That ends the deposition.

18 MR. SPENCER: Well, it adjourns the  
19 deposition.

20 (The deposition was adjourned at 12:13 p.m.)  
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CERTIFICATE OF OATH

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STATE OF FLORIDA )  
)  
COUNTY OF ESCAMBIA )

I, Cynthia Layer, Certified Professional  
Reporter and Notary Public, State of Florida, hereby  
certify that WILLIAM CARDEN, personally appeared before  
me on the 16th day of February 2018, and was duly  
sworn.

Signed this 2nd day of March 2018.

  
CYNTHIA LAYER, CSR

Notary Public, State of Florida



CERTIFICATE OF REPORTER

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STATE OF FLORIDA )

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I, Cynthia Layer, Certified Professional Reporter, certify that I was authorized to and did stenographically report the foregoing deposition; and that the transcript is a true record of the testimony given by the witness; that the witness did not waive reading and signing.

I further certify that I am not a relative, employee, attorney, or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorneys or counsel connected with the action, nor am I financially interested in this action.

Signed this 2nd day of March 2018.

  
CYNTHIA LAYER, CSR

CYNTHIA LAYER, CSR

Certified Shorthand Reporter

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\_\_\_\_\_  
William Carden, PE  
(Notary not required in California)  
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March 5, 2018

William Carden  
3320 McLemore Dr,  
Pensacola, FL, 32514

Case Name: Whitaker v. Hyundai Motor Company

Veritext Reference Number: 2797503

Witness: William Carden Deposition Date: 2/16/2018

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Enclosed you will find a transcript of your deposition.

As the reading and signing have not been expressly

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in the presence of a notary except in California where

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If the jurat is not returned within thirty days of your receipt of  
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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

THE ABOVE RULES ARE CURRENT AS OF SEPTEMBER 1, 2016. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS  
COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

Veritext Legal Solutions is committed to maintaining the confidentiality of client and witness information, in accordance with the regulations promulgated under the Health Insurance Portability and Accountability Act (HIPAA), as amended with respect to protected health information and the Gramm-Leach-Bliley Act, as amended, with respect to Personally Identifiable Information (PII). Physical transcripts and exhibits are managed under strict facility and personnel access controls. Electronic files of documents are stored in encrypted form and are transmitted in an encrypted fashion to authenticated parties who are permitted to access the material. Our data is hosted in a Tier 4 SSAE 16 certified facility.

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